AMERICAN ANNALS OF THE DEAF

Official Organ

Conference of Executives of American Schools for the Deaf
Convention of American Instructors of the Deaf

IRVING S. FUSFELD
Editor

POWRIE V. DOCTOR
Assistant Editor

Under the Direction of

IGNATIUS BJORLEE, of Maryland, 1942

PERCIVAL HALL, of the District of Columbia, *ex officio*

ELWOOD A. STEVENSON, of California, 1945

CLARENCE J. SETTLES, of Florida, 1945

MRS. H. T. POORE, of Tennessee, 1948

LEONARD M. ELSTAD, of Minnesota, 1948

Executive Committee of the Conference

MAY

1941

VOLUME 86 NUMBER 3

THE CONFERENCE OF EXECUTIVES OF AMERICAN SCHOOLS FOR THE DEAF

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The Conference of Executives of American Schools for the Deaf, originally the Conference of Superintendents and Principals of American Schools for the Deaf, was founded in 1868 and subsequently incorporated under the laws of the State of Maryland in 1931. The Conference is an organization of the executive heads of schools for the deaf in the United States and Canada, and has for its object "to promote the management and operation of schools for the deaf along the broadest and most efficient lines and to further and promote the general welfare of the deaf."

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The Convention of American Instructors of the Deaf, founded in 1850 and incorporated by act of Congress in 1897, is an organization of educators of the deaf in the United States and Canada with the general object of "promotion of the education of the deaf on the broadest, most advanced, and practical lines," and for that purpose "to secure the harmonious union, in one organization, of all persons actually engaged in educating the deaf in America."

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Contents

TENTATIVE PROGRAM FOR THE THIRTY-SECOND REGULAR MEETING OF THE CONVENTION OF AMERICAN INSTRUCTORS OF THE DEAF ..... *Clarence J. Settles, Ph.D.* 205

OFFICIAL CALL FOR A SPECIAL MEETING OF THE CONFERENCE OF EXECUTIVES OF AMERICAN SCHOOLS FOR THE DEAF ..... *Ignatius Bjorlee, LL.D.* 217

ARTISTIC APPRECIATION AMONG DEAF CHILDREN ..... *Rudolf Pintner, Ph.D., L.H.D.* 218

The Results, 219; Summary, 223; References, 224.

THE KELLEY-GUILMARTIN SPEECH TEST FOR DEAF CHILDREN ..... *Noble H. Kelley, Ph.D., and Mary D. Guilmartin, B.S.* 225

THE PROGNOSIS OF READING ACHIEVEMENT OF THE DEAF ..... *Richard G. Brill, M.A.* 227

Purpose of This Study, 229; Procedure, 229; The Measurement of Hearing, 231; Validity of the Visual Language Tests, 232; Effect of Age of Onset of Deafness on Language Development, 233; Effect of Amount of Hearing Loss on Language Learning, 234; Prediction of Reading Ability from the Visual Language Tests, 237; Summary and Conclusions, 239; Bibliography, 240; Appendix I, 241; Appendix II, 241.

STANDARDIZED TESTS USED WITH THE DEAF .. *A. Edwina Elliott* 242

RESPONSIBLE CIVIC REALISM IN PROBLEMS OF SECONDARY EDUCATION OF THE DEAF ..... *Harvey B. Barnes, M.A.* 250

THE OREGON PROGRAM FOR CONSERVATION OF HEARING ..... *Warren H. Gardner, Ph.D.* 255

Introduction, 255; Purpose of Hearing Conservation, 256; Requirements of a Complete Program, 256; An Interested Community Is a Prerequisite for Hearing Conservation, 257; The Hearing Conservation Program, 257; Appendix, 264.

SURVEY OF HEARING IN PUBLIC SCHOOLS OF THE STATE OF MARYLAND ..... *Ignatius Bjorlee, LL.D.* 266

AN OUTLINE FOR MAKING SCRAPBOOKS AND POSTERS EFFECTIVE IN FOODS AND HOMEMAKING CLASSES.. *Edna I. Paananen, B.A.* 268

Scrapbooks, 268; Posters, 270.

IS LOSS OF HEARING A TRAGEDY? ..... *Albert Berg, M.A.* 272

STUDENT-EDITED SCHOOL PUBLICATIONS *Alan B. Crammatte, M.A.* 275

MISCELLANEOUS ..... *I. S. F.* 283

The Oregon State Program for Conservation of Hearing, 283; The New Rochelle, N.Y., Program, 283; Assistance to Teachers for Improvement in Service, 284; Suggestions for Public School Teachers in Dealing with Children Who Have a Hearing Loss, 285; Aviation and Hearing, 286; A Popular Review of Present-Day Education of the Deaf, 287; Compendium of State Legislation on the Hard of Hearing and the Deaf, 290; Certification, 293; A Suggested Program for the District of Columbia, 293.

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AMERICAN ANNALS OF THE DEAF

Vol. 86 MAY, 1941 No. 3

Tentative Program for the Thirty-Second Regular Meeting of the Convention of American Instructors of the Deaf

FULTON, MISSOURI, JUNE 23-27, 1941

Monday, June 23

1:30 P.M. Registration, Main Office, Administration Building

6:00-7:30 P.M. Dinner

8:00 P.M. Opening Session, Westminster College Gymnasium

Presiding: Elwood A. Stevenson, president, Convention of American Instructors of the Deaf

Music

Invocation

"Star Spangled Banner"

Addresses of Welcome

1. Governor of Missouri
2. Hon. Frank Hensley, Mayor of Fulton
3. Hon. Grover C. Sparks, president, Board of Managers of the Missouri School
4. Mr. Truman L. Ingle, superintendent, Missouri School

Responses

East: Edmund B. Boatner, superintendent, American School

West: Edwin G. Peterson, president, Montana School

North: Leonard M. Elstad, superintendent, Minnesota School

South: J. S. Ganey, superintendent, Alabama School
"God Bless America"
Address, "The State's Responsibility for a Program of Social Welfare," Rev. Wilbur D. Ruggles, pastor, Grace Episcopal Church, Kirkwood, Missouri
Announcements
Reception, Dancing, Cards

Tuesday, June 24

7:30-8:30 A.M. Breakfast
9:00-9:50 A.M. Demonstrations
Preschool and Kindergarten
Speech Development
Auricular Training and Rhythm
Vocational Training
Leader: Tom L. Anderson, principal, vocational department, Iowa School
Chairman: Arthur G. Norris, supervising teacher, vocational department, Missouri School
Presiding: Glenn I. Harris, head teacher, advanced department, Colorado School
"Our Part in Co-operation with Federal Rehabilitation Agencies"
Appointment of Committees
Art
Leader: Mrs. Geneva Llewellyn, Wisconsin School
"Art for the Beginner," Mrs. Maria R. Kaufmann, Central Institute
Section for Deaf Teachers
Leader: G. C. Farquhar, Missouri School
"Reading with the Metronoscope," G. C. Farquhar, Missouri School
10:00-10:50 A.M. Section Meetings
Supervision
Leader: Miss Sarah E. Lewis, head teacher, primary department, Beverly School
Chairman: Harry L. Welty, principal, Nebraska School
"Purposes in Education," Florence Sundstrom, super-

vising teacher, primary department, Indiana School
Discussion, Edward S. Foltz, Kansas School
"Interpreting Language Constructions in Reading," Mrs. Rachel D. Davies, Central Institute
Discussion: William M. Milligan, Colorado School

Preschool and Kindergarten
Leader: Virginia Rosser, Missouri School
Presiding: Lloyd E. Berg, superintendent, Iowa School
"In considering the possible value of preschool training, is the important question whether there is an acceleration of academic learning around the age of ten, or whether there is a diminution of adjustment problems?" D. T. Cloud, managing officer, Illinois School
"Do We Teach Speech as a Means or an End?" William L. Fair, principal, Kansas School

Speech Development
Leader: Jennie M. Henderson, principal, Horace Mann School
"Speech as Conducted at Central Institute," Mrs. Rachel D. Davies
"Speech Work with the Hearing Aids, with Auricular Classes," Mrs. Victoria C. Jesseman, Horace Mann School
"Speech of Pupils in Intermediate Grades," Mary E. Numbers, teacher-in-charge, middle school, Clarke School

Auricular Training and Rhythm
Leader: Marshall S. Hester, supervising teacher, advanced department, California School

Curriculum Content
Leader: Roy G. Parks, principal, academic department, Georgia School
"Hearing Aids, Speech Correction, and Speech Reading in the Curriculum," Edward W. Tillinghast, California School; Elizabeth S. Dunlap, Rochester, New York; Juliet A. McDermott, Georgia School

Health and Physical Education
Leader: George W. Harlow, Pennsylvania School
Social and Character Training
Leader: Rae Martino, Waterbury, Connecticut
Presiding: Alfred Cranwill, principal, Michigan School
"Character Education," Harley Z. Wooden, superintendent, Michigan School
Panel Discussion:
John A. Gough, superintendent, Oklahoma School
Enfield Joiner, supervising teacher, St. Mary's School
Boyce Williams, vocational principal, Indiana School
W. Burton Moore, Missouri School
Lula Belle Highsmith, Florida School
Marvin Thompson, Arkansas School
Art
"Correlating Art with Academic Subjects," Edith Jordan, Illinois School
Section for Deaf Teachers
Leader: G. C. Farquhar, Missouri School
"Integration of Extra Activities into the Curriculum," Nathan Zimble, principal, Arkansas School

11:00-12:00 M. General Session, Auditorium, Missouri School
Presiding: Ignatius Bjorlee, superintendent, Maryland School
Greetings
1. Conference of Executives of American Schools for the Deaf, Percival Hall, president
2. American Association to Promote the Teaching of Speech to the Deaf, Harris Taylor, New York
3. National Forum on Deafness and Speech Pathology
4. The Council of Teachers of the Deaf and Hard of Hearing in Public Schools, Jennie M. Henderson, president
5. National Association of the Deaf, Tom L. Anderson, president

President's Address, "Schools for the Deaf—Today and

Tomorrow," Elwood A. Stevenson, president, Convention of American Instructors of the Deaf

12:00-1:30 P.M. Luncheon

2:00-4:15 P.M. General Session, Auditorium, Missouri School

Presiding: Carl E. Rankin, superintendent, North Carolina School

Papers and Discussions

2:00-2:30 Supervision

"New Frontiers in the Education of the Deaf," S. R. Silverman, Central Institute

2:30-3:00 Preschool and Kindergarten

"The Preschool Program at St. Mary's," Sister Rose Alice, St. Mary's School

3:00-3:30 Speech Development

"Clinical Tests with Deaf Children Based on Their Acoustic Reflexes. Phases of Speech Therapy," Augusta Jellinek, Central Institute

3:30-4:00 Auricular Training and Rhythm

3:00-5:00 P.M. Tea for Superintendents' and Principals' Wives, Fulton Country Club

4:15 P.M. Meeting—Conference of Executives of American Schools for the Deaf

4:30 P.M. Meeting—The Council of Teachers of the Deaf and Hard of Hearing in Public Schools

6:00 P.M. Gallaudet College Alumni Dinner

8:00 P.M. General Session, Auditorium, Missouri School

Presiding: Lloyd E. Berg, superintendent, Iowa School

Address, "The Place of Language in Mental Development," Dr. Theo W. H. Irion, dean, School of Education, University of Missouri

Demonstration, "A Leisure-Time Activity," A. L. Brown, superintendent, Colorado School

Wednesday, June 25

7:00-8:30 A.M. Breakfast

9:00-9:50 A.M. Demonstrations

Preschool and Kindergarten

Speech Development

Auricular Training and Rhythm
Vocational Training
Presiding: Charles B. Grow, principal, vocational department, Kentucky School
"Girls' Vocational Programs"
Panel Discussion
Art
"Marionettes," Demonstrations and Discussion
Section for Deaf Teachers
"Arithmetic," Max Mossel, Missouri School

10:00-10:50 A.M. Sectional Meetings

Supervision
"Turns with a Supervising Teacher," Mary Grey Barron, supervising teacher, American School
"The Supervising Teacher as Director of Intracurricular Activities," Annie V. Craig, supervising teacher, Iowa School
"Prerequisites for a Deaf Reader," Mary S. Standley, Illinois School
General Discussion
Preschool and Kindergarten
Presiding: Faye C. Allen, W. Roby Allen School
"The Preschool Program at St. Joseph's," Sister Anne Bernadine, St. Joseph's Institute
"What Should We Be Learning from the Public Schools?" Laura Tittsworth, Gough School
Speech Development
"Research Work and Experiments in Speech as Conducted in the Speech and Hearing Clinic of Ohio State University." (This paper will be amplified with a film showing what is done in the classroom), Marie K. Mason, Ohio State University
Auricular Training and Rhythm
Curriculum Content
"Language in the Primary, Intermediate and Advanced Departments," Mary E. Numbers, teacher-in-charge, middle school, Clarke School; Enfield Joiner, supervising, teacher training, St. Mary's school; Marie Kennard, supervising teacher, Georgia School

Health and Physical Education

Social and Character Training

Presiding: Valentine Becker, principal, Wisconsin School

"What of the Finished Products?" Max Friedman and Alan B. Crammatte, New York School

"Boys' and Girls' Week—a Citizenship Project," Charles Ramsey, Arizona School

General Discussion

Art

"Picture Study," Mrs. Margaret Fitzpatrick, Indiana School

Section for Deaf Teachers

"Professional Preparation and Advancement of Deaf Teachers," Irving S. Fusfeld, dean, Gallaudet College; Frederick A. Moore, Ohio School

11:00-12:00 A.M. General Session, Auditorium, Missouri School

Presiding: J. Lyman Steed, superintendent, Oregon School

Address, "Mental Hygiene from the Teachers' Viewpoint," Dr. Park J. White, Washington University, St. Louis, Missouri

Address, "The Problem of Leadership," Tom L. Anderson, principal, vocational department, Iowa School

12:00-1:30 P.M. Luncheon

1:30 P.M. Convention Photograph, Steps, Administration Building

2:00-4:30 P.M. General Session, Auditorium, Missouri School

Presiding: W. Laurens Walker, superintendent, South Carolina School

Address, "Testing the Young Deaf Child," Dr. Marshall S. Hiskey, department of educational psychology and measurements, University of Nebraska

Address, "The Importance of Personality in Everyday Living," Elizabeth Peet, dean of women, Gallaudet College

Address, "The Religious and Moral Training of the Deaf," Rev. R. C. Fletcher, Birmingham, Alabama

6:00 P.M. L. P. F. Dinner

8:00 P.M. General Session, Auditorium, Missouri School
Presiding: Madison J. Lee, superintendent, Kentucky School
Address, "A Pattern of Education for the World Today," Dr. Ralph H. Woods, state department of education, Frankfort, Kentucky
Demonstration, The Voder, the voice-producing organ, The Bell Telephone Company

Thursday, June 26

7:00-8:30 A.M. Breakfast
9:00-9:50 A.M. Demonstrations
Preschool and Kindergarten
Speech Development
Auricular Training and Rhythm
Vocational Training
Presiding: Howard M. Quigley, superintendent, Kansas School
"Presentation of the National School Plan," Harvey B. Barnes, principal, vocational department, Illinois School
Open Forum Discussion
Art
"Posters," Round-table Discussion
Section for Deaf Teachers
"Algebra," David Mudgett, Illinois School
10:00-10:50 A.M. Sectional Meetings
Supervision
"Problems of Selection and Interpretation of Intelligence Tests for the Deaf," Richard G. Brill, California School
Discussion: Mrs. Wilbur Bennett, Nebraska School
Preschool and Kindergarten
Presiding: Mrs. R. H. Pearce, Missouri School
"The Nursery School—the Period of Learning Readiness," Mary New, Lexington School
"An Experiment on the Play of Nursery Deaf and Hearing Children," Carmelita Klorer, Central Institute

Speech Development

"Method of Speech (Tadoma) for Young Children," Sophia K. Alcorn, assistant principal, Detroit Day-School

"Exposition and Plans for Definite Work in Intermediate and Advanced Grades in Speech," Enfield Joiner, supervising, teacher training, St. Mary's School

"Speech Correction in the Public Schools" (Colored film showing activities in speech correction classes in Detroit Public Schools), Hildred A. Gross, supervisor, speech correction classes, Detroit, Michigan

Auricular Training and Rhythm

Curriculum Content

"Skills and Attitudes of Reading and Their Development," Josephine Bennett, Lexington School; Mrs. Rachel D. Davies, Central Institute; Margaret Paris, Georgia School; Katherine Watson, Georgia School

Vocational Training

Section Business Meeting

Health and Physical Education

Social and Character Training

Presiding: Mrs. H. T. Poore, superintendent, Tennessee School

"The Religious Training Tools in Our Schools," Dr. Fran McCluer, president, Westminster College, Fulton, Missouri

"Important Tools in a Religious Training Program," Rev. R. C. Fletcher, Birmingham, Alabama

Art

"Toy Making," Mrs. Catherine Torgeson, Kansas School

Section for Deaf Teachers

"The Teaching of Mathematics," B. B. Burnes, Minnesota School

11:00-12:00 A.M. General Business Session, Auditorium, Missouri School

Presiding: Elwood A. Stevenson, President

12:00-1:30 P.M. Luncheon

2:00-4:30 P.M. General Session, Auditorium, Missouri School

Presiding: Irving S. Fusfeld, dean, Gallaudet College

Papers and Discussions

2:00-2:30 Curriculum Content

"Improving Our Educational Opportunities Through Curriculum Development," Elizabeth S. Dunlap, Rochester, N.Y.

2:30-3:00 Vocational Training

"The National Vocational School Plan," D. T. Cloud, managing officer, Illinois School

3:00-3:30 Health and Physical Education

3:30-4:00 Social and Character Training

"Do the Social and Character Training Tools in Our Schools of Today Meet the Needs of the Deaf for the World of Tomorrow?" L. M. Elstad, Superintendent, Minnesota School

6:00 P.M. Old-Fashioned Callaway County Barbecue and Entertainment.

Friday, June 27

7:00-8:30 A.M. Breakfast

9:00-9:50 A.M. Demonstrations

Preschool and Kindergarten

Speech Development

Auricular Training and Rhythm

Vocational Training

Presiding: Carl F. Smith, Minnesota School

Committee Reports

Building Courses of Study

Section for Deaf Teachers

"Language"

10:00-10:50 A.M. Sectional Meetings

Supervision

"Helping the Teachers," Mary D. Cason, teacher-in-charge, Maryland School

"Reading Readiness," Hannah Oehler, supervising

teacher, primary department, Western Pennsylvania School

"Reading in the Primary Grades," Mrs. Lillian R. Jones, principal, primary department, Louisiana School

Preschool and Kindergarten

Presiding: Elizabeth H. Rice, principal, primary and lower intermediate, Missouri School

"Nursery School Philosophy and Technique," Dr. Dura-Louise Cockrell, state project, technician, W.P.A., Nursery Schools, Jefferson City, Missouri

Speech Development

"Speech as Taught to the Beginning Children," Josephine Avondino, Alexander Graham Bell School, Chicago

"Primary School," Ethel M. Hilliard, supervising teacher, intermediate department, New Jersey School

Auricular Training and Rhythm

Curriculum Content

"Latest Developments in Testing in Schools for the Deaf," Sam B. Craig, principal, Kendall School; Richard G. Brill, California School

Vocational Training

(Continuation of 9:00-9:50 A.M. Program)

Health and Physical Education

Social and Character Training

Presiding: Edmund B. Boatner, superintendent, American School

"Social and Character Training Tools in the Day-Schools," John F. Grace, principal, Gallaudet Day-School

"The Supervisors' Association—Aims and Objectives," Eudora Hale, Missouri School

Section for Deaf Teachers

"The Approach to the Language Problem," James N. Orman, principal, Unit Three, Illinois School

11:00-12:00 A.M. General Session, Auditorium, Missouri School

Presiding: Elwood A. Stevenson, President

Address, "The Socio-Economic Adjustment of the Deaf," Mrs. H. T. Poore, superintendent, Tennessee School

ADJOURNMENT

CLARENCE J. SETTLES, PH.D.
First Vice President, and Chairman of the Program Committee
St. Augustine, Florida

Official Call for a Special Meeting of the Conference of Executives of American Schools for the Deaf

A SPECIAL meeting of the Conference of Executives of American Schools for the Deaf will be held at Fulton, Missouri, Tuesday, June 24, 1941, at 4:15 P.M., in connection with the meeting of the Convention of American Instructors of the Deaf. Executive heads of all member schools in good standing are eligible to participate in the deliberations of this meeting. In the absence of such executive, the school principal may be designated to take part in the deliberations.

At this meeting reports will be heard from the president, the treasurer, the editor of the ANNALS, together with such matters of business as may come before the group. Brief papers will be read covering certification of teachers and training centers for teachers of the deaf, the qualifications of candidates for admission to Gallaudet College, and the important question of nomenclature.

The time and place for holding the regular triennial meeting of the Conference in 1942 will be discussed.

IGNATIUS BJORLEE, LL.D.
Chairman, Executive Committee

Artistic Appreciation Among Deaf Children[1]

By RUDOLF PINTNER, PH.D., L.H.D.
Professor of Educational Psychology, Teachers College Columbia University, New York

THE OLD THEORY of sensory compensation assumed that the loss of one sense led inherently to a greater sensitivity in another. So, for example, loss of vision led to heightened acuity of hearing or increased tactual sensitivity. By this theory the deaf ought to possess increased visual sensitivity. This old theory has very definitely been disproved and no one now pays any attention to it. But we do know that the blind learn to make use of their senses of touch and hearing to make up for their loss of vision, and hence develop abilities not ordinarily developed by the seeing individual. It has been similarly suggested that the deaf, being forced to make use of vision in many instances where the hearing make use of audition, might develop a greater acuity of vision or at least a greater attentiveness to or interest in visual stimuli. No thorough investigation of this hypothesis seems to have been made. Lindner (1) made some comparisons of deaf and hearing individuals in German schools in regard to drawing and concluded that the deaf in general were equal in ability to the hearing and included much more detail in their drawing. However, many studies in this country with the Goodenough Drawing Test do not seem to bear out Lindner's suggestion, because most of the average scores for the deaf have been below those for the hearing.

The present study deals with artistic appreciation and not with drawing ability. It might be argued that because the deaf are forced more than the hearing to pay attention to visual stimuli, they might therefore become more sensitive to the aesthetic qualities of their environment. At any rate,

[1] The author is much indebted to Miss Anna Dragositz for the statistical handling of the data and wishes here to thank her for this work.

it will be of interest and value to measure the aesthetic appreciation of deaf children as contrasted with the average hearing child. For this purpose the Art Appreciation Test of McAdory (2) was given to the deaf and the subsequent standardization by Siceloff *et al.* (3) used for the purpose of comparing the deaf and the hearing. It should be emphasized that the McAdory Test deals with the common objects of everyday life, with furniture, tableware, pottery, rugs, dresses, buildings and so on. It is not a test of fine art. It does not measure one's ability to discriminate between pictures or statuary. The test consists of many plates, each of which has four presentations of a given object. The same object is repeated four times in varying degrees of artistic merit. The examinee records his judgment as to which he likes best, next best, next and least. The plates are interesting and most children find the test a fascinating game.

In the present experiment, the first 36 plates of the McAdory Test were given to 333 deaf boys and 384 deaf girls in the five following schools:[2]

Illinois School for the Deaf, Jacksonville, Illinois.
West Virginia Schools for Deaf and Blind, Romney, West Virginia.
Louisiana State School for the Deaf, Baton Rouge, Louisiana.
New York School for the Deaf, White Plains, New York.
Lexington School for the Deaf, New York City.

The age range of the children tested was from 11 to 21 years.

The Results

The results of the tests are given in the table. The meaning of the various columns of this table will be more easily understood, if we explain one line in more detail. The first line has to do with the results of the test given to boys of age 11, *i.e.* from 11 years no months to 11 years 11 months. The next column, *N*, shows that there were 29 deaf boys of this age. The next two columns under *Range* show the extent of the scores from lowest to highest and also the equivalent *Art Ages* for this range of scores. The poorest

[2] The author is greatly indebted to the superintendents and principals of these schools for their help and co-operation in carrying out the test.

TABLE I

C. A.	N	Range		Q_3		Median		Q_1		Mean		σ	$\frac{Diff.}{\sigma\ Diff.}$
		Score	Art Age	Score	Art Age	Score	Art Age	Score	Art Age	Score	Art Age		
11-0–11-11													
Boys	29	62–166	−10-0 to 19-0	138.3	16-11	113.8	12-2	101.8	10-4	114.6	12-4	28.5	.30
Girls	24	52–186	−10-0 to 19-0	142.2	14-0	114.0	10-6	88.5	−10-0	117.2	10-10	33.7	
12-0–12-11													
Boys	29	56–188	−10-0 to 19-0+	128.3	14-8	108.3	11-2	84.1	−10-0	110.8	11-8	31.0	.60
Girls	39	54–176	−10-0 to 19-0+	125.8	11-9	104.0	−10-0	88.3	−10-0	106.2	−10-0	30.1	
13-0–13-11													
Boys	23	76–164	−10-0 to 19-0+	155.8	19-0	128.0	14-8	92.3	−10-0	123.6	13-10	29.9	1.02
Girls	48	76–202	−10-0 to 19-0+	151.5	15-11	130.5	12-4	110.5	10-2	131.6	12-6	31.9	
14-0–14-11													
Boys	27	72–202	−10-0 to 19-0+	145.8	19-0	126.0	14-3	100.4	10-2	125.7	14-3	30.4	1.54
Girls	45	52–196	−10-0 to 19-0+	164.3	19-0	136.1	13-1	117.9	10-11	137.5	13-4	31.9	
15-0–15-11													
Boys	41	84–198	−10-0 to 19-0+	166.3	19-0+	140.0	17-6	119.8	13-2	139.8	17-6	30.9	.30
Girls	37	84–198	−10-0 to 19-0+	162.4	19-0+	142.0	14-0	119.8	11-2	141.9	14-0	30.4	
16-0–16-11													
Boys	40	88–186	−10-0 to 19-0+	159.5	19-0+	140.2	17-6	116.5	12-8	138.4	16-11	25.5	.44
Girls	48	52–220	−10-0 to 19-0+	165.5	19-0+	144.0	14-4	114.0	10-6	141.5	13-10	38.7	
17-0–17-11													
Boys	35	70–208	−10-0 to 19-0+	165.6	19-0+	145.8	19-0+	112.3	11-10	139.7	17-6	32.2	2.18
Girls	37	74–212	−10-0 to 19-0+	168.1	19-0+	154.3	16-7	146.1	14-8	154.4	16-7	23.0	
18-0–18-11													
Boys	27	56–196	−10-0 to 19-0+	163.8	19-0+	135.8	16-4	123.9	13-10	139.9	17-6	30.6	.81
Girls	35	68–194	−10-0 to 19-0+	171.8	19-0+	162.0	19-0+	124.3	11-7	147.1	14-10	37.9	
19-0–19-11													
Boys	19	82–202	−10-0 to 19-0+	166.1	19-0+	136.0	16-4	118.3	12-10	141.9	18-1	34.3	.21
Girls	31	40–208	−10-0 to 19-0+	165.8	19-0+	146.0	14-8	116.3	10-9	139.6	13-8	39.6	
20-0–20-11													
Boys	40	90–194	−10-0 to 19-0+	159.5	19-0+	140.5	17-9	122.2	13-6	143.1	18-4	25.0	1.18
Girls	21	58–176	−10-0 to 19-0+	153.9	16-7	138.3	13-4	125.8	11-9	134.3	12-9	28.4	
21-0–21-11													
Boys	23	82–194	−10-0 to 19-0+	171.8	19-0+	148.0	19-0+	118.3	12-10	140.3	17-6	42.0	1.10
Girls	19	108–184	−10-0 to 19-0+	169.6	19-0+	158.3	18-1	132.3	12-6	151.7	15-11	22.1	

score made by these eleven-year-old boys was 62 and the highest score 166. The score of 62 is below the ten-year-old norms for hearing boys and as there are no norms for younger children, the equivalent *Art Age* for our score of 62 is designated as minus 10-0. The highest score of 166 is above the norms for the highest age for which norms are available and hence the *Art Age* is given as 19-0 plus. In other words, the scores of these eleven-year-old deaf boys scatter over the total range for which hearing norms are available (*i.e.* from age 10 to 19) and a few cases go above and below these limits. A glance down this column showing range of *Art Ages* shows that this same wide range of scores is found for every group of deaf boys and girls tested. Under the next two columns, headed Q_3, are given the score and the equivalent *Art Age* for the 75th percentile child in the group. This shows that the upper 25 per cent of these boys made scores of 138 or better, with *Art Ages* of 16-11 or better. The next two columns, under *Median,* show the middle score and equivalent *Art Age.* The middle or median eleven-year-old deaf boy achieves a score equal to that of a twelve-year-old hearing boy. The next two columns under Q_1 give us similar information for the lower quarter of the group, showing the scores which cut off the lowest 25 per cent of the group. The next two columns show the arithmetical mean score for the group with its equivalent *Art Age.* Thus on the average these deaf boys who range in age from 11-0 to 11-11 with a probable average age of 11-6 make an average score on this test equivalent to what hearing boys of 12-4 have been found to make. The next column gives us the standard deviation of the scores and the last column is the ratio of the difference between the average scores of the boys and the girls to the standard deviation of this difference. If this ratio is low (below 2.5 or 3), the chances are that there is no reliable difference between the average scores for the boys and the girls. This is true of all our ratios. In a similar manner we are to interpret the other lines of the table. In doing this we must remember that there are separate norms for hearing boys and girls. Hearing girls

have been found to score on the average slightly higher than hearing boys at all levels.

A study of the whole table shows the following facts with reference to our sample of deaf children. At all the ages

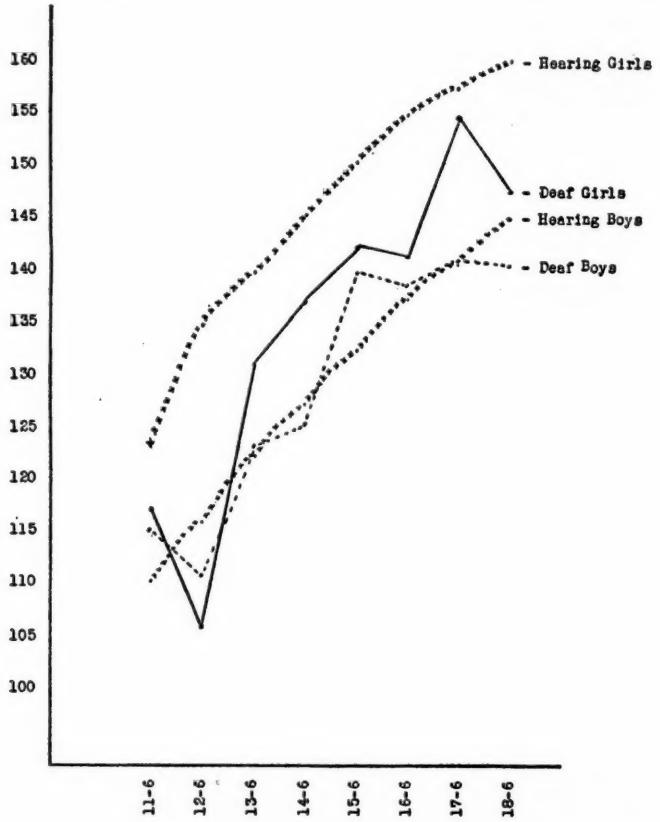

FIG. 1.
MEAN SCORES ON MCADORY ART TEST FOR DEAF AND HEARING CHILDREN

tested, there are a few boys and girls who score very high and a few who score very low. There is, however, a steady but irregular increase in score for both our boys and girls as they grow older. This can be noted by reading the means

or medians for the boys or girls separately from the youngest up to the highest age group. This can also be seen from the graph showing the mean scores for the deaf boys and girls and the norms for hearing boys and girls. The graph stops at age 18-6 because there are no hearing norms beyond age 19-0. Both the graph and the table show us that in general the deaf fall below the hearing. This is very definite with regard to the deaf girls, who at no age reach the mean score for the hearing girls. The deaf boys, however, are in general much closer to the hearing boys and at four age levels exceed the norms for the hearing, at one age level equal the hearing norms, and at six age levels fall below.

Summary

The McAdory Art Test was given to 333 deaf boys and 384 deaf girls. The deaf boys are in general about equal to hearing boys. The deaf girls are definitely below the norms for hearing girls. The deaf girls are slightly better than deaf boys, but these differences between deaf girls and deaf boys are small and probably not reliable.

On the whole then, we have here an ability in which there is little difference between the deaf and the hearing. At the same time, we must remember that we have found no evidence in this particular test for the hypothesis that the deaf, because of their auditory handicap, are more sensitive to visual stimuli around them than the hearing are. There seems to be no special sensitivity of deaf children to the artistic aspects of their environment. What effect life in a residential school might have upon artistic sensitivity, we cannot tell. Artistic persons might regard the aesthetic aspects of a residential school with disdain. But for many deaf children coming from poverty-stricken or even squalid homes, the translation to a residential school for part of their lives must mean a decided improvement in aesthetic environment, and some children are probably very sensitive to such an influence.

Finally, we may suggest that there seems to be much less difference on this test between the deaf and the hearing than is the case with many other tests, notably those of verbal

intelligence or school achievement in the common branches. It would seem to the writer to be advisable to push further into this whole area of the artistic capacity of the deaf, not with a view of showing that the deaf have special capacity in this area, but rather with the hope of finding that they are less handicapped in this area than in others, so that wise educators of the deaf may be able to utilize better these capacities in the total education and training of the deaf.

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The Kelley-Guilmartin Speech Test for Deaf Children

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THE USE of mechanical recorders in a large number of schools for the deaf has now made it practical to construct and standardize an objective speech test for deaf children. The present writers have devised a set of test material which can be used by any school in making records of their pupils' speech. The material differs little from that used in most schools doing this type of work with their pupils, except that it is more inclusive and is in a form available to all. It was in fact developed directly from the daily lesson plan used by Mary D. Guilmartin in her day-school deaf class. This in turn derived from her normal training in the two schools from which she was graduated, Clarke School and Central Institute for the Deaf. A thorough survey also was made of current practices in speech teaching in most schools for the deaf. All the items of speech improvement commonly used were included in the test if it was possible to score them from a record. There is no item on the test which has been failed by all pupils taking the test and no item which has been done perfectly by all. Successive classes make successively higher scores, so the test seems to be measuring what the schools are teaching.

The pictures are bright and attractive to the children. The print is large, clear, and on firm cardboard. The pretest, given by the child's own classroom teacher, accustoms him to going through the procedure of the test so that the need for directions at the time of the recording is almost eliminated. It takes about six minutes for the child to do the actual talking for his record. The writers averaged about fifteen minutes total time per child for recording, and about thirty minutes for scoring each child's record later.

The data resulting from the scoring of these records evolve in the following forms: 1. an individual diagnostic profile of each child's speech; 2. a list of his defective elements; 3. an analysis of his most frequent errors in conversation; 4. his level on a total point scale; 5. his improvement in the form of a more level profile if the remedial measures indicated have been used; 6. his improvement in total point level; 7. a class diagnostic profile based on averaging the class performance in each phase of speech improvement tested; 8. class level; 9. class improvement from test to test; 10. school and class rate of improvement per year; 11. and the comparison of any of these items with the general performance of all the deaf children tested.

In order to offer an interesting number of comparable scores a larger number of recordings must be collected and tabulated. To this end the Bivens Foundation has made a grant to cover the cost of records, postage, and carfare for pupils where necessary. The test materials and directions will be sent to any school willing to co-operate by making some records. It is preferred to have whole classes chosen rather than picked pupils, and about twenty records from a school. The school sends the writers the completed records. These records will then be scored, and the resulting data sent back to the school. The schools may have the records back if they want to try the scoring process, too. Each school is given a code number and the name of the school does not appear on any report other than its own. Records from several more schools will make it possible to complete this phase of the project and have the resulting point scale ready for use when school opens next fall.

All necessary materials, funds, and information may be obtained by writing Dr. Noble H. Kelley, University of Louisville, Louisville, Kentucky.

The Prognosis of Reading Achievement of the Deaf[1]

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Language, because it is the major tool for all mental processes, is one of the primary reasons for the superiority of the human race over the rest of the animal kingdom. A child who is born deaf, or who acquires deafness at an early age, usually enters school without even the concept of there being such a thing as language. This, of course, is due to the fact that normally language is learned through the ear, and with the deaf child this avenue of approach is cut off. It follows then that the most important function of a school devoted to teaching the deaf is to teach the English language.

Achievement tests of all sorts are verbal in nature, and most intelligence tests that attempt to measure abstract intelligence are highly verbal, so, as a result, the efforts to measure either the mental capacity or achievement of a deaf child are grossly unfair if norms for hearing individuals are used. Some work has been done with performance tests with the deaf, but this does not give any basis for prediction of language ability. Thus Brown (1) found the reading ability of pupils at the Illinois School for the Deaf to correlate $-.06 \pm .07$ with scores on the Arthur Point Scale of Performance Tests and $.003 \pm .07$ with the Pintner Non-Language Mental Test specially designed for use with the deaf.

Keys and Pedersen at the University of California developed and standardized the Visual Language Tests to measure the progress of language learning during the first five or six years of a deaf child's instruction. These tests were designed to measure somewhat the same thing that the reading batteries of the Stanford Achievement Tests meas-

[1] A Seminar Study under the direction of Noel Keys, professor of education, University of California.

ure, but at a lower level than that at which the Stanford Achievement Tests function well. These Visual Language Tests which are described in the manual (4) are of four types: Word-knowledge, sentence-comprehension, paragraph-reading and sentence-making. Each type has three parallel forms, save the sentence-comprehension, which has two; and each form yields a score in terms of age norms for deaf pupils. The reliabilities of this test, when all forms are given, are very high. Computed by the method of split halves and Spearman-Brown formula, for pupils in a single grade the reliabilities range from .95 in the case of sentence-comprehension to .98 for word-knowledge, with .99±.001 shown for total scores on the entire series of eleven forms. The reliabilities for single forms are also high. As for Form A and Form B in the word-knowledge test each has a reliability of .98, while Form C has a reliability of .89. In the sentence-comprehension and paragraph-reading tests the lowest reliability of any single form is .90. The three forms of the sentence-making test have reliabilities of .89, .88, and .85 respectively. Retests were made in a study by Keys and Boulware (3) and they found correlations varying from .85±.02 for word-knowledge to .92±.01 for paragraph-reading which is still very satisfactory.

Keys and Boulware (3) made a study in 1936 of the predictability of the gains in language knowledge, as measured by the Visual Language Tests, in relation to the age of onset of deafness and the percentage of hearing loss or residual hearing. The two factors were considered separately and the study was made on the basis of gains made in one year, from the spring of 1935 to the spring of 1936. This study concluded that, as far as rate of progress in language learning is concerned, it makes no difference whether a child becomes deaf at the age of two to five or at younger than two years. Keys and Boulware did conclude, however, that the child who became deaf at the later age would have a higher level of attainment. Each child in this study had a loss of greater than 40 per cent in his better ear. This was in general agreement with the results obtained by Pintner and Paterson (6) in a study they made in 1917.

However, Keys and Boulware (3) concluded that a group of deaf children with loss of hearing in the better ear of from 40 to 79 per cent made gains in language over a year's time that were statistically significant over a group whose hearing loss was greater than 80 per cent. A sampling of 25 children showed a superiority of more than ten points in average Visual Language Quotient of the partially hearing.

Purpose of This Study

The purpose of this study is threefold. First, to determine the validity of the Visual Language Tests by using the reading batteries of the Stanford Achievement Tests as a criterion. Second, to determine whether five years of instruction bore out the conclusions of the Keys-Boulware study which was made on the basis of one year of instruction; in other words, to see whether after five years the partially deaf group had made greater gains in language and to see if there was still no difference on the basis of age of onset of deafness. Finally, to determine the prognostic value of the Visual Language Tests as to reading ability after a five-year interval.

Procedure

As this is a study based on retesting a group of subjects used in a previous study, we will quote directly from the Keys-Boulware study as to subjects and procedure in 1936:

> In April and May of 1935, Keys and Pedersen, authors of the Visual Language Tests, administered the entire series to the California School for the Deaf at Berkeley, the Gough School at San Francisco, and the special classes for the deaf at Hawthorne School in Oakland. All classes were tested whose achievement was estimated to be at or below the level of hearing third-graders. In the spring of 1936, within one week of the anniversary of its original testing, each class was retested by the writers of this article. Not all types of test were administered to each class, however, as the word-knowledge was known to be too simple for advanced pupils, and the paragraph-reading and sentence-making too difficult for beginners.
>
> For purposes of the present study, a carefully defined selection was then made from the more than two hundred children tested. Only those children were included:
>
> Concerning whom the special school records indicated the age of onset of deafness as known, and who were recorded as having been born deaf or becoming so before their sixth birthday.
>
> Who had entered a special class or school for the deaf between

the ages of four and one half and seven, and continued under such instruction up to the time of testing.

Who were under fifteen years of age at the first testing (thus excluding a few mentally subnormal and incapable learners).

Who showed not more than 60 per cent of residual hearing in the better ear, this being regarded as the approximate dividing line between the deaf and the merely hard of hearing.

In computing gains on any one of the four types of test, a further elimination was made of all children who had missed one or more of the forms of that type at either testing, or who had made a zero or perfect score on one, so that the full extent of improvement could not be accurately measured.

The number of cases available for the several computations after all eliminations ranged from 44 and 59 in the case of word-knowledge, to 99 for the sentence-making tests. For gains in total Visual Language Age, only those individuals were considered who had taken every form of all four types of test in both years. Since no one type was given to all classes, only pupils near the middle of the grade range tested could qualify in this respect. Just 25 such were found, all of whom were residents of the California School for the Deaf. Of the other restricted groups, from 70 to 80 per cent were enrolled in that school.

Over 90 per cent of the pupils included were of ages seven to eleven inclusive in the course of the year covered by this study.

The subjects used in this present study of 1940 were those who had been used in the 1936 study and who were still enrolled in the California School for the Deaf in May, 1940. The grading system in a school for the deaf is not comparable to that of a public school. The California School for the Deaf has three academic departments and roughly the children of ages six to nine are in the primary department, ten to fourteen in the intermediate department, and fourteen to twenty-one in the advanced department. These are not hard and fast divisions as allowance is made for individual differences in the matter of achievement. There are also a number of special classes in the school for those whose academic achievement is retarded in relation to their chronological age. At the time of the 1940 study, which includes 90 subjects, 54 per cent were in the intermediate department, 33 per cent in the advanced department, and thirteen per cent in special classes.

Whereas in 1936 a total battery score was determined only for those who had taken all four types of the test, in 1940 a battery score on the Visual Language Tests was determined for all who had taken all of the forms in two or more types. There were 80 cases retested in 1940 who had a score for the total 1935 battery and 89 cases who had

a total score for the 1936 battery. The smallest number of cases taking any one type of test was the group of 30 for whom we have scores in word-knowledge for 1935.

In the spring of 1940, 90 subjects were given Form X of either the primary or advanced form of the New Stanford Achievement Tests. One subject had taken only one type of the Visual Language Tests in 1936, so his score was not used in determining the validity of the Visual Language Battery Quotients. These tests were given in the same week of the anniversary of the testing in 1935 and 1936. The reading section of the Stanford Achievement Tests is composed of one test of paragraph-meaning and one test of word-meaning. The two scores averaged form the Stanford Battery score in this study. To eliminate the factor of spurious correlation due merely to chronological age a system of quotients was used. The scores for both the Visual Language Tests and the Stanford Tests were first recorded in terms of Educational Age. These were converted into months as were the subjects' chronological ages at the time they were tested. Then an Educational Quotient for each type of each battery and the total batteries was obtained by dividing the Educational Age by the Chronological Age. The mean of the quotients on the Visual Language Tests was 96, due to the fact that these tests were standardized for a deaf group; while the mean of the quotients for the 1940 Stanford Battery is 65, due to the necessity of using norms for the hearing. However, this presumably does not affect the comparisons within the group.

The Measurement of Hearing

The original study in 1936 had to classify the individual subjects as to hearing loss. So we shall quote directly as to their method of measuring hearing (3):

> Most of the tests of hearing loss were personally administered by Marshall Hester in the laboratory of the California School for the Deaf. First measurements were obtained with an audiometer of the 3A, or buzzer type. This yields a complex tone covering the frequencies typical of normal speech. This tone is varied in intensity until the threshold of hearing is ascertained. Percentages of hearing as thus determined are regarded as maximal. Children showing 25 per cent or more of hearing by this criterion were given a complete radio-ear test with an instrument similar to the usual 2A audiometer.

Residual hearing at five frequencies distributed over the range of speech sounds was then averaged.

Both audiometers named are of the individual type, and yield a separate score for each ear. All pupils included in the calculations of the present study showed grave impairment in both ears, and the difference between the two was seldom great. The record of the better ear was taken as the index of residual hearing, since Madden (5) found this to yield correlations uniformly superior to those for the poorer ear or average of the two ears, and within .01 of the multiple r obtainable from both ears.

To determine the retest reliability of the audiometer scores for the group studied was entirely impractical, but this was estimated of the order of .8 for the 3A records which were the determining factor in the dichotomy employed (7).

The California School for the Deaf retests the hearing of its pupils periodically. This is done more frequently in cases where progressive deafness is considered a possibility. For this study the most recent audiograms were checked over to determine whether any subjects considered partially deaf in 1936 had moved into the more profoundly deaf group, or *vice versa*. No such cases were found.

Validity of the Visual Language Tests

To determine the validity of the Visual Language Tests the Stanford Reading Battery was used as a criterion, as Keys and Pedersen (4) were trying to measure the same thing, but at a lower level. Product-moment ratios of correlation were found for each type in the Visual Language Battery and for the Battery as a whole with the quotients found in the Stanford Battery administered in 1940. The Visual Tests were given in 1935 and 1936. The word-knowledge tests in the Visual Language Series are similar in form to the word-meaning tests in the Stanford Battery, so correlations were found for these quotients for the two years. Likewise, the paragraph-reading and the paragraph-meaning tests are similar in form and so they were correlated.

TABLE I

Product-Moment r of Each Type of the Visual Language Quotient with the 1940 Stanford Battery Quotient

Date of VL Test	*Word-Knowledge*	*Sentence-Reading*	*Paragraph-Reading*	*Sentence-Meaning*	*Battery*
1935	N = 30	N = 63	N = 75	N = 75	N = 80
	.79 ± .05	.82 ± .03	.85 ± .02	.86 ± .02	.87 ± .02
1936	N = 53	N = 86	N = 78	N = 78	N = 89
	.92 ± .01	.84 ± .02	.87 ± .02	.87 ± .02	.87 ± .02

TABLE II

PRODUCT-MOMENT r OF THE VISUAL LANGUAGE WORD-KNOWLEDGE QUOTIENT WITH THE STANFORD WORD-MEANING QUOTIENT

1935	*1936*
N = 30	N = 53
.83 ± .04	.88 ± .02

TABLE III

PRODUCT-MOMENT r OF THE VISUAL LANGUAGE PARAGRAPH-READING QUOTIENT WITH THE STANFORD PARAGRAPH-MEANING QUOTIENT

1935	*1936*
N = 75	N = 78
.80 ± .03	.86 ± .02

These high ratios of correlation, despite a four and five year interval, show that the Visual Language Test must be testing the same thing that the Stanford Reading Battery tests before the deaf child has reached the level whereby he can be tested on a Stanford Achievement Test. The lowest correlation obtained, that of .79 for the Word-Knowledge Test with the Battery in 1935, can be attributed to the scarcity of cases, 30 in that particular distribution. The individual types of Word-Knowledge and Paragraph-Reading test correlate higher with the Stanford Battery as a whole than with the individual similar forms in the Stanford test, except in the one instance of Word-Knowledge in 1935. It seems reasonable to conclude from this that the use of either battery as a whole is better than the use of just one type.

EFFECT OF AGE OF ONSET OF DEAFNESS ON LANGUAGE DEVELOPMENT

All the subjects in this study became deaf before they reached their sixth birthday. The subjects were divided into two subgroups, in one of which the members became deaf before reaching the age of two, and in the other group the members became deaf between the ages of two and five inclusive. Normal hearing children begin to learn to talk by the time they are two years old. It might be supposed that if a child does not become deaf until after he is two years old he will have learned certain language patterns through the ear which will be advantageous to him later on.

TABLE IV

BI-SERIAL CORRELATION WITH AGE OF ONSET OF DEAFNESS COMPARING THOSE WHO WERE DEAF UNDER TWO YEARS OF AGE WITH THOSE WHO BECAME DEAF AT FROM TWO TO FIVE YEARS OF AGE INCLUSIVE

1936 Gains in Visual Language Battery Shown Over One Year of Schooling	N = 25 −.16 ± .17*
1940 Educational Quotient on Stanford Battery	N = 90 .03 ± .09

* According to Keys and Boulware (3).

The statistical treatment used in this part of the study was that of bi-serial correlation. The data do not constitute a normal distribution, as at least half of the subjects were deaf from birth. However the bi-serial *r's* are presumably comparable in magnitude to the product-moment *r's* which would have been obtained had the data lent themselves to such treatment. As previously stated, in 1936 the cases used to determine gains for a total Visual Language Score were only those that took all four types in both 1935 and 1936. That number was just 25. In 1940 every subject taking the Stanford test took both types and thus there were 90 subjects with a Stanford Battery Score. As can be seen by Table IV, in both instances the results were statistically not at all significant or even indicative of a trend. So, as language ability is measured by either the Visual Language Tests or the Stanford Achievement Reading Tests, the age of onset of deafness under six years of age has no effect on the rate of progress.

EFFECT OF AMOUNT OF HEARING LOSS ON LANGUAGE LEARNING

TABLE V

DIFFERENCE IN MONTHS OF PROGRESS SHOWN BY TOTALLY AS COMPARED WITH PARTIALLY DEAF PUPILS

Type of Test	*Number of Cases*		*Average Gain by*	
	1. Partially deaf	2. Totally deaf	1. Partially deaf	2. Totally deaf
*Visual Language Battery '36	11	14	17.27	7.87
Visual Language Battery '36	9	12	16.61	8.23
Stanford Battery '40	9	12	8.00	8.00

	Difference $Mean_1 - Mean_2$	σ_{diff}	*C.R. or Diff./*σ_{diff}
*Twenty-five cases in 1936	9.40	2.50	3.76
Twenty-one cases in 1936	8.38	4.04	2.07
Twenty-one cases in 1940	00		

* According to Keys and Boulware (3).

TABLE VI

BI-SERIAL *r's* OF PARTIAL VERSUS TOTAL DEAFNESS WITH VARIOUS MEASURES OF LANGUAGE ACHIEVEMENT

*1936	25 cases	Gains over one year	.63 ± .12
1936	21 cases	Gains over one year	.55 ± .14
1940	21 cases	Reading Quotients	.02 ± .20
1940	90 cases	Reading Quotients	.20 ± .07

* According to Keys and Boulware (3).

In 1936 Keys and Boulware concluded that groups with hearing losses of from 40 to 79 per cent had a distinct advantage in language learning over groups of deaf children with hearing losses greater than 80 per cent. This was based on the gains made in a year's time and the fact that these gains were statistically significant. (See Appendix I for 1936 Table of Gains.) In 1940 twenty-one of the original 25 cases who had total battery quotients were still in school, as previously stated, and of the four who had dropped out two were in the partially deaf group and two were in the group with lower hearing. If, in 1936, the critical ratio and bi-serial r had been calculated on the basis of the gains of these 21 cases, the result would have been a C.R. = 2.07 and $r_{bis.} = .55 \pm .14$. This would still show a distinct advantage for the partially deaf group. If this conclusion was valid, and if the factors governing the instruction in the next four years were about the same as in the first year, it would be logical to expect that in 1940 the partially deaf group would still have at least as much advantage as before, and it might justifiably be supposed that it would gain in advantage in the four intervening years.

Table VI shows that this is not so. After four more years of instruction the $r_{bis.}$ for ninety cases is only $.20 \pm .07$, which is not quite significant. Using exactly the same cases as were used in the 1936 sample the $r_{bis.} = .02 \pm .20$, while

in 1936 for 21 cases it was .55 ± .14. These figures show that after four more years of instruction the amount of hearing loss gave almost no indication of the amount of achievement of the group. In 1936 the bi-serial correlation was calculated on the basis of gains, while in 1940 the bi-serial correlation was calculated on the basis of actual quotients, or achievement level. So, to make a more direct comparison, the gains from the 1935 Educational Ages were calculated for the 21 sample cases. The mean gain over the five years for the two groups of nine and twelve respectively was exactly the same. This is shown in Table V. This would result in a bi-serial correlation of zero. We must conclude from this that with this group, if there is more than a 40 per cent loss before six years of age, the amount of loss does not influence the language learning ability of the child.

Why should the partially deaf group make gains of statistical significance over the severely deaf group in one year, and then not have any gains at the end of five years? We can only suggest possible answers and await further research to have the problem solved. In the first place it might be because the partially deaf group was taught without using hearing aids to utilize the sound perception, and in the same classes with those who were totally deaf. Thus no special advantage was taken of their residual hearing and an original asset was not developed. This may be countered with the fact that the partially deaf group had the same type of instruction in the first year of the study and showed the greater gain without benefit of a different manner of instruction.

A second possibility is the fact that when the groups were younger much more time was spent on the teaching of speech. The partially deaf group should get better speech, and, as a by-product, possibly better language. As the groups became older and moved out of the primary department much less time was devoted to speech. Lack of differentiation in methods may be the reason the group with an original asset did not maintain its advantage.

Another answer may lie in the level of complexity of the language in the two different years of the study. As previ-

ously stated, over 90 per cent of the subjects were of ages seven to eleven inclusive at the time of the study in 1936. At this age the language structure that the deaf child is learning is relatively simple. The sentences used are all very simple. Possibly the children with sound perception are aided in learning this simple language merely by memorizing the tonal beats. They can learn words, phrases, commands and simple sentences by hearing the rhythm without interpreting the sound in the same sense that a hearing person does. This would account for the definite advantage of the partially deaf at the lower level. Four years later the language has become much more complex. This complex language structure is too involved to be interpreted merely by hearing the rhythm or beats. When this stage is reached sound perception may be of no value in learning language.

Neither of these studies was able to control or to take into account the factor of intelligence, because so far there is no non-language intelligence test for the deaf that is known to be valid for prediction of language learning. In the light of the contrasting results obtained from the effect of the amount of hearing loss on the learning of language it may be that intelligence alone is the most important factor. Valid intelligence tests for the deaf will have to be standardized before this can be objectively determined however.

Prediction of Reading Ability From the Visual Language Tests

TABLE VII

Bi-Serial Correlation with 1940 Stanford Reading Quotients Comparing Those Who Had a Visual Language Quotient of 80 or Above in 1935 with Those Having Below 80

Word-Knowledge	*Sentence-Reading*	*Paragraph-Reading*	*Sentence-Meaning*	*Battery*
N = 30	N = 63	N = 75	N = 75	N = 80
.95 ± .10	.94 ± .05	.90 ± .05	.90 ± .05	.90 ± .05

These correlations are highly significant for prediction of scores on Stanford Achievement Reading Tests in contrast to the correlations for percentage loss of hearing or age of onset of deafness. As a result, the prediction can safely be made that if a child makes a quotient of less than

80 on the Visual Language Test he has practically no chance of successfully learning language or reading in the next five years as tested by the Stanford Achievement Tests.

By referring to Figure 1, one may make individual prediction of Stanford Reading Quotients from the Visual Lan-

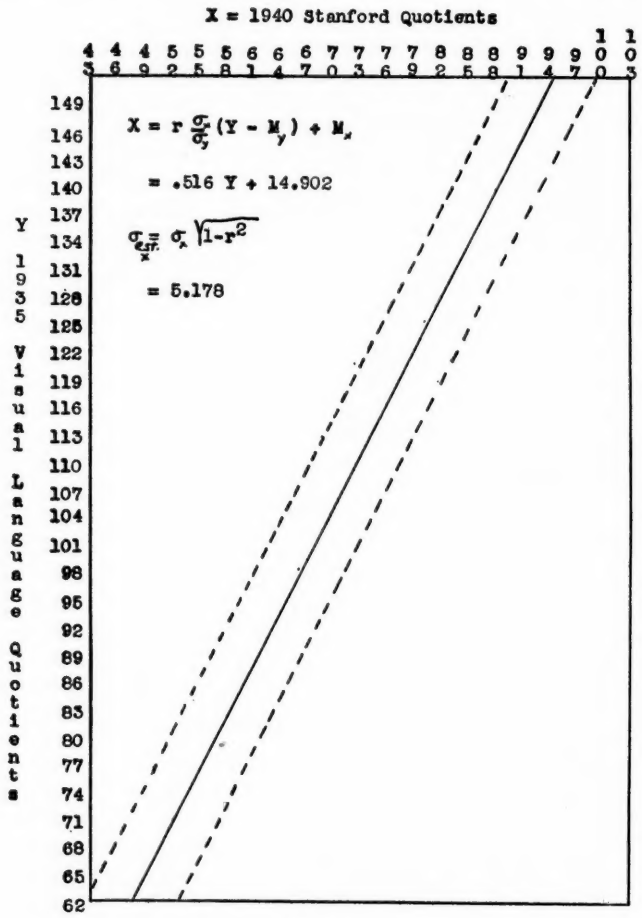

FIG. 1

PREDICTION OF STANDARD QUOTIENTS FROM VISUAL LANGUAGE QUOTIENTS WITH A FIVE YEAR INTERVAL BETWEEN TESTS

guage Quotient obtained five years earlier. The solid line is that of the regression equation based on the 1935 product-moment r of .87, calculated on the scores of 80 cases. The sigma of an estimated case is five points, so that the chances are two out of three that any subject will fall within the dotted lines on the graph.

Summary and Conclusions

The Visual Language Tests were developed and standardized for the deaf. These tests were designed to test the language ability of the deaf child below the level of such standardized tests as the New Stanford Achievement Tests. These tests have a very high reliability but their validity had not been proven. This study proved the validity of these tests by obtaining Stanford Achievement Reading scores for a group of subjects four and five years after they had been tested on the Visual Language Tests. The close comparability and constancy of the educational quotients on the two tests are proved by the correlation of .87 over both the four-year and the five-year interval.

In 1936 Keys and Boulware showed on the basis of a one-year study that age of onset of deafness below six years of age had no effect on the amount of language learned in one year. The present study shows that this conclusion has held true over a period of five years.

In the study in 1936 Keys and Boulware also showed that a group of children whose hearing loss ranged from 40 to 79 per cent gained more in language learning in one year than a group that ranged in deafness from 80 to 100 per cent. The amount the partially deaf group gained was statistically significant over the gains of the more profoundly deaf group. This study finds that the partially deaf group after five years had no advantage whatsoever over the severely deaf group. Three possible explanations are offered to account for the difference in the findings and it is suggested that innate intelligence may be a more important factor in the learning of language than the amount of residual hearing after the language has reached the complex stage.

Finally, this study has shown that the Visual Language Tests make excellent predictions of the deaf child's ability to learn language while he is still between seven and eleven years of age. If he has an educational quotient of less than 80 on the Visual Language Tests, in spite of having had adequate exposure to teaching there is little likelihood of his becoming proficient in language. To judge from the group under study, he has one chance in five of barely reaching the lowest quartile on the Stanford Reading Battery five years later, and no chance of reaching the mean. Those at the lowest quartile could hardly be called proficient. On the other hand, if a child has a quotient greater than 80 the chances are only one in ten that his quotient on the Stanford Reading Battery five years later will be below the lowest quartile. (See Appendix II for scatter diagram.)

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1. Brown, A. W., "The Correlation of Non-Language Tests with Each Other, with School Achievement, and with Teachers' Judgments of the Intelligence of Children in a School for the Deaf." *Journal of Applied Psychology,* vol. xiv, August, 1930, pp. 371-375.
2. Garrett, H. E., *Statistics in Psychology and Education.* Second Edition. New York: Longmans, Green and Company, 1937.
3. Keys, Noel, and Boulware, Louise, "Language Acquisition by Deaf Children as Related to Hearing Loss and Age of Onset." *The Journal of Educational Psychology,* vol. xxix, September, 1938, pp. 401-412.
4. Keys, Noel, and Pedersen, Virginia D., *Visual Language Tests* and *Manual.* University of California.
5. Madden, R., *Social Status of the Hard of Hearing Child.* Teachers College, Columbia University, Contributions to Education, No. 499, 1931, pp. 50-51.
6. Pintner, R., and Paterson, D. G., "Psychological Tests of Deaf Children." *Volta Review,* vol. x, December, 1917, pp. 661-667.
7. Upshall, C. C., *Day Schools vs. Institutions for the Deaf.* Teachers College, Columbia University, Contributions to Education, No. 389, 1929, p. 56.

Appendix I

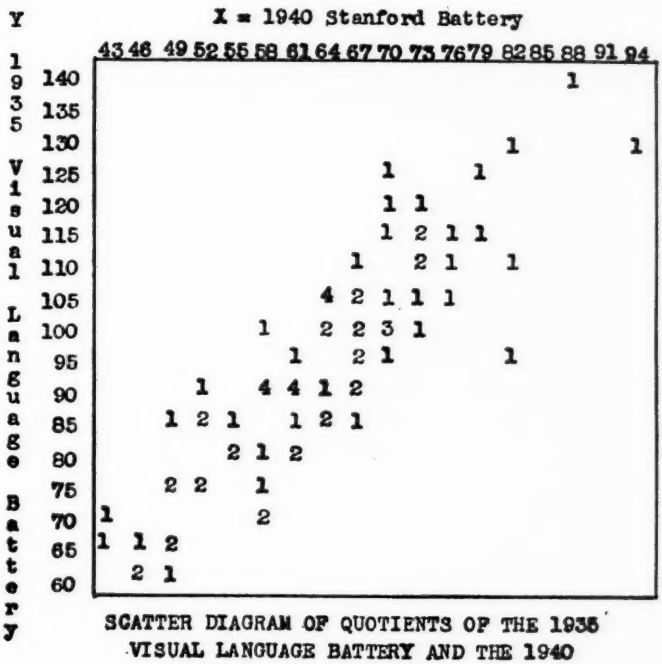
Keys and Boulware: Language Acquisition by Deaf Children as Related to Hearing Loss and Age of Onset (1936)

TABLE VIII

Difference in Months of Progress Shown by Profoundly as Compared with Partially Deaf Pupils on Visual Language Tests Over One Year of Instruction

Type of Test	*Average Gain by* 1 Partially deaf	2 Profoundly deaf	*Difference Mean₁-Mean₂*	σ_{diff}	*C.R. or Diff./σ_{diff}*
Word-knowledge	14.90	10.08	4.82	1.15	4.19
Sentence-comprehension	15.37	8.45	6.92	1.48	4.68
Paragraph-reading	11.45	6.80	4.65	0.55	8.45
Sentence-making	10.78	9.26	1.52	1.13	1.35
Visual Language Age	17.27	7.87	9.40	2.50	3.76

Appendix II



SCATTER DIAGRAM OF QUOTIENTS OF THE 1935 VISUAL LANGUAGE BATTERY AND THE 1940 STANFORD READING BATTERY

Standardized Tests Used with the Deaf

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IT IS a great satisfaction to know that research activity in the education of the deaf is gaining momentum. One of the most effective means by which this increasing interest has been stimulated is the use of standardized tests. With the continued improvement and refinement of these instruments of measure there is bound to ensue a valuable enlargement of the store of knowledge of the psychology of children affected by impairment of hearing.

In view of the ever-widening interest in the scientific approach, and in the hope it may be of some aid, the following classified arrangement is presented of reports made in the past three decades of studies in which standardized tests were employed with the deaf.

Author	*Title*	*Publication*	*Tests*	*Number and Type of Subjects*
1. Kilpatrick, W.	Comparative Tests	ANNALS, 1912, 57, 427–428	Binet	Deaf Children
2. Kilpatrick, W.	Mentality Tests	ANNALS, 1914, 59, 394–398	Modified Binet-Simon	"
3. Pintner, R., & Paterson, D.	The Binet Scale and the Deaf Child	ANNALS, 1915, 60, 301–311 *J. Ed. Psych.*, 1915, 6, 201–210	Goddard-Binet	22 "
4. Pintner, R.	A Class Test with Deaf Children	ANNALS, 1916, 61, 264–275 *J. Ed. Psych.*, 1915, 6, 591–599	Digit-Symbol, Symbol-Digit	325 "
5. Pintner, R., & Paterson, D.	The Form-Board Ability of Young Deaf and Hearing Children	*Psychol. Clinic*, 1916, 9, 234–237 ANNALS, 1916, 61, 184–189	Seguin Form-Board	37 " Age 7 20 Hearing; Age 6
6. Pintner, R., & Paterson, D.	Learning Tests with Deaf Children	*Psychol. Monog.*, 1916, No. 88	Digit-Symbol, Symbol-Digit	About 1,000 deaf children; ages 8 to 20
7. Pintner, R., & Paterson, D.	The Survey of a Day-School for the Deaf	ANNALS, 1916, 61, 417–433	Educational & Intelligence (a) Class (b) Individual	
8. Pintner, R., & Paterson, D.	A Measurement of the Language Ability of Deaf Children	ANNALS, 1917, 62, 211–239	Trabue Language Scale	570 deaf children in two schools

Author	*Title*	*Publication*	*Tests*	*Number and Type of Subjects*
9. Pintner, R., & Paterson, D.	The Ability of Deaf and Hearing Children to Follow Printed Directions	*Pedagog. Sem.*, 1916, 23, 477–497 ANNALS, 1917, 62, 448–472	Woodworth and Wells Easy Directions Test	366 deaf; ages 9–20; 308 hearing
10. Pintner, R., & Paterson, D.	A Comparison of Deaf and Hearing Children in Visual Memory for Digits	*J. Exp. Psych.*, 1917, 2, 76–88		
11. Pintner, R., & Paterson, D.	Psychological Tests of Deaf Children	*Volta Review*, 1917, 19, 661–667	Comparison of the Binet-Simon and the Pintner Scales	
12. Pintner, R.	The Value of Mental Tests in Classifying Pupils	ANNALS, 1918, 63, 196–204		
13. Pintner, R.	The Measurement of Language Ability and Language Progress of Deaf Children	*Volta Review*, 1918, 20, 755–764	Trabue Language Scale	Over 1,000 deaf in 4 schools
14. Pintner, R., & Paterson, D.	Some Conclusions from Psychological Tests of the Deaf	*Volta Review*, 1918, 9, 10–14		
15. Porteus, S. D.	Measurement of the Intelligence of Deaf and Dumb Children	*J. Ed. Psych.*, 1918, 9, 13–31	Porteus Maze Test	
16. Newlee, C.	A Report of Learning Tests with Deaf Children	*Volta Review*, 1919, 21, 216–223	Digit-Symbol, Symbol-Digit	85 deaf in a day-school
17. Pintner, R.	Deductions from the Tests of Mentality in Schools for the Deaf	ANNALS, 1920, 65, 278–301	Standardization and use of group tests explained	
18. Pintner, R., & Reamer, J.	A Mental and Educational Survey of Schools for the Deaf	ANNALS, 1920, 65, 451–472	Pintner Non-Language Group and Educational Survey Tests	2,500 deaf children in 15 state schools and 11 day-schools for the deaf
19. Pintner, R., & Reamer, J.	Individual Differences Measured by Psychological Tests	ANNALS, 1921, 66, 8–28	An analysis of No. 18	"

Author	*Title*	*Publication*	*Tests*	*Number and Type of Subjects*
20. Day, H. E. & Fusfeld, I. S.	A Classification Test Given to the Students of Gallaudet College	ANNALS, 1921, 66, 409–424	A Simple High School Test	
21. Reamer, J.	Mental and Educational Measurement of the Deaf	*Psychol. Review*, 1921, no. 132	Pintner Educ. Survey Tests	2,423 deaf
22. Pintner, R.	Intelligence Testing (One Chapter on the Deaf)	Henry Holt Co., 1923		
23. McManaway, H. M.	A Report on the Use of Standard Tests in the Virginia School for the Deaf	*Volta Rev.*, 1923, 25, 407–416 ANNALS, 1923, 68, 354–372	Pintner Non-Lang. and Ed. Tests and other Standardized Tests	
24. Pintner, R.	Group Tests After Several Years	*J. Educ. Psych.*, 1925, 16, 391–395	Retests of No. 18	2,423 deaf; ages 12–15
25. Pintner, R.	A Mental Survey of the Deaf	*J. Ed. Psych.*, 19, 145–151	Pintner Non-Language and Educ. Tests	4,432 deaf in 41 schools; ages 12–15
26. Pintner, Day & Fusfeld	The Survey of Schools for the Deaf	*J. Ed. Psych.*, 1928, 19, 145–151 ANNALS, 1927–1928, vols. 72, 73	"	"
27. Farquhar, G. C.	A Study of a Reading Test	ANNALS, 1928, 73, 264–272	Standard Read.-Achievement Test	
28. Hall, P.	Results of Recent Tests at Gallaudet College	ANNALS, 1929, 74, 389–395	New Stanford Achievement Tests	
29. Pintner, R.	Speech and Speech-Reading Tests for the Deaf	ANNALS, 1929, 74, 480–486	To determine correlations between speech, speech-reading, educ. achievement and intelligence	
30. Drever, J. & Collins, M.	Performance Tests of Intelligence	Oliver & Boyd, Edinburgh, 1928	Drever and Collins Performance Scale	1,500 deaf; ages 5–16
31. Brown, A. W.	Correlations of Non-Language Tests with Each Other, with Sch. Achievement and with Teachers' Judgment of Pupils' Intelligence	*J. Appl. Psych.*, 1930, 14, 371–375		

Author	*Title*	*Publication*	*Tests*	*Number and Type of Subjects*
32. Peterson, E. G., & Williams, J.	Intelligence of Deaf Children as Measured by Drawings	ANNALS, 1930, 75, 273–290	Goodenough, Drawing of a Man Test	330 deaf in 4 schools; ages 5–14
33. Drever, J.	Intelligence Tests for the Deaf	*Volta Review*, 1929, 270–271 (Abstract by G. Moore)	Drever & Collins Performance Tests	1,474 deaf
34. Upshall, C. C.	Day-Schools vs. Institutions for the Deaf	Teachers College Contributions to Education, No. 389, 1929	Intelligence and Educ. Achiev. Tests and Personal Data	311 day-school pupils paired with 311 inst. pupils
35. Guilmartin, M. D.	A Summary of Psych. Tests Applied to the Deaf	Volta Bureau, 1931		
36. Shirley, M., & Goodenough, F. L.	A Survey of Intelligence of Deaf Children in the Minnesota School	ANNALS, 1932, 77, 238–247	Goodenough Int. Test & Pintner Non-Lang. Test	
37. Schick, H., & Meyer, M. F.	The Use of the Lectometer in Testing Deaf and Hearing	ANNALS, 1932, 77, 292–304	Lectometer—a non-verbal test of copying patterns	
38. Long, J. A.	Motor Abilities of Deaf Children	Teachers College Contributions to Educ., No. 514, 1932	Stanford Motor Skills & Tests of Grip and Balance	87 pairs of deaf and hearing equated for age, sex and race; ages 8–18
39. MacKane, K.	A Comparison of the Intelligence of Deaf and Hearing Children	Teachers Col. Cont. to Educ., No. 585, 1932	Pintner-Paterson, Drever-Collins, & Grace Arthur Performance Scales and Pintner Non-Language Test	130 equated pairs of deaf and hearing children; ages 10–12
40. Lyon, V. W., *et al*	Report of the 1931 Survey of the Illinois School for the Deaf	ANNALS, 1933, 78, 157–175	Educational & Intelligence Tests	
41. Fusfeld, I. S.	What Standard Tests Have Shown at Gallaudet College	Proceedings of the International Congress on the Educ. of the Deaf, 1933, 197–206		

Author	*Title*	*Publication*	*Tests*	*Number and Type of Subjects*
42. Lyon, V. W.	Personality Tests with the Deaf	ANNALS, 1934, 79, 1–4	Thurstone Personality Schedule	87 deaf high-school pupils
43. Lyon, V. W.	A Study of Vocational Abilities of Students Who Have Attended the Illinois School for the Deaf	*J. Appl. Psych.*, 1934		
44. Schick, H. F.	The Use of Standard Performance Tests for Preschool Age Children With a Language Handicap	ANNALS, 1935, 80, 297 (Abstract)		
45. Fusfeld, I. S.	Suggestions from the Use of Standard Tests at Gallaudet College	ANNALS, 1935, 80, 384–390		
46. Lyon, V. W.	Use of Vocational & Personality Tests with the Deaf	*J. Appl. Psych.*, 1934, 18, 224–230		
47. U. S. Office of Education	The Federal Survey of the Deaf and Hard of Hearing	ANNALS, 1935, 80, 116–142; 200–242; 342–366; 395–407	Questionnaires filled by personal interviews	19,580 deaf
48. Scyster, M. S.	Summary of Four-Year Experiment with Pre-School Deaf Children at Illinois School for the Deaf	ANNALS, 1936, 81, 212–230	Merril-Palmer & Non-Language Items of Minnesota Pre-School Tests, and Personal Interest Tests	About 50 under 6 years of age
49. Peterson, E. G.	Testing Children with Kohs' Block Design	ANNALS, 1936, 81, 242–254	Kohs' Block Designs	100 deaf; ages 6–18
50. Drever and Collins	Performance Tests of Intelligence	Oliver & Boyd, Edinburgh, 1936	A continuation of the tests reported in 1928	
51. Brunschwig, L.	A Study of Some Personality Aspects of Deaf Children	Teachers Col. Cont. to Educ., No. 687, 1936	Rogers Test of Personality Adjustment & A Personality Inventory for Deaf Children	159 deaf and 243 hearing children

Author	*Title*	*Publication*	*Tests*	*Number and Type of Subjects*
52. Bradway, K. P.	The Social Competence of Deaf Children	ANNALS, 1937, 82, 122–140	Vineland Social Maturity Scale	92 persons deaf from early infancy and 11 deafened after 5 years of age
53. Brunschwig, L., & Pintner, R.	An Adjustment Inventory for Use in Schools for the Deaf	ANNALS, 1937, 82, 152–167	Personality Invt. (as above) & Haggerty-Olson-Wickman Behavior Rating Schedule	1,200 deaf
54. Hunt, J. F.	Abstracts of Articles Concerned with the Educational Psychology of the Deaf	ANNALS, 1937, 82, 176–188		
55. Brunschwig, L., & Pintner, R.	Personality Adjustments of Deaf Children in Relation to (1) method by which taught, and (2) amount of deafness in each subject's family	*J. Genetic Psych.*, 1936, 49, 377–388		
56. Pintner, R., Fusfeld, I. S., & Brunschwig, L.	Personality Tests of Deaf Adults	*J. Genetic Psych.*, 1937, 51, 305–327	Bernreuter Inventory	126 deaf adults; 50 deaf college students
57. Morsh, J. E.	A Comparative Study of Deaf and Hearing Students (Motor reactions and coordinations)	ANNALS, 1937, 82, 223–233	Dunlap tapping, Dunlap steadiness, & Dunlap balance tests; location memory, speed of eye, hand-eye coordination	96 deaf; 167 hearing
58. Williams, B. R.	Knowledge of Social Conduct of the Deaf	Indiana School *Hoosier*, 1937	Strang Test of Social Usage	62 deaf
59. Madden, R.	The Social Status of the Hard-of-Hearing Child	Teach. Col. Cont. to Educ., No. 409, 1931	Pintner Survey & Stanford Ach. Tests, and Personality Ratings by Teachers	583 deaf in two schools
60. Kirk, S. A.	Behavior Problems in Deaf and Hard-of-Hearing Children	ANNALS, 1938, 83, 131–137	Haggerty-Olson-Wickman Behavior Rating Schedule	112 deaf; ages 7–16

Author	*Title*	*Publication*	*Tests*	*Number and Type of Subjects*
61. Springer, N.	A Comparative Study of the Intelligence of a Group of Deaf and Hearing Children	ANNALS, 1938, 83, 138–152	Goodenough Drawing of a Man Test, & Div. 1, Intellectual Traits of Hagg. Ols.-Wickman Sched.	330 pairs deaf and hearing; ages 6–12
62. Pintner, R., & Brunschwig, L.	A Study of Certain Fears and Wishes Among Deaf and Hearing Children	*J. Educ. Psych.*, 1937, 28, 259–270		
63. Pintner, R.	Emotional Stability of the Hard of Hearing	*J. Genet. Psych.*, 1933, 43, 293–311		
64. Stanton, M. B.	Mechanical Ability of Deaf Children	ANNALS, 1938, 83, 244–254 Teach. Col. Cont. to Educ. 751, 1938	Minnesota Mech. Ability Test	157 equated pairs deaf & hearing; ages 12–15
65. Welles, H. H.	The Measurement of Certain Aspects of Personality Among Hard-of-Hearing Adults			
66. Streng, A., & Kirk, S. A.	Social Competence of Deaf and Hard-of-Hearing Children in a Public Day-School		Vineland Soc. Maturity Scale, Grace Arthur Perf. Scale, Chicago Non-Verbal Exam.	97 deaf & hard of hearing; ages 6–18
67. Springer, N.	A Comparative Study of the Behavior of Deaf and Hearing Children of N. Y. City	ANNALS, 1938, 83, 255–273	Hagg.-Ols.-Wickman Scheds. 3, 4, 5, & 7, & Goodenough Drawing Test	337 deaf & 415 hearing
68. Springer, N.	A Comparative Study of Psychoneurotic Responses of Deaf and Hearing Subjects	*J. Educ. Psych.*, Sept., 1938, 459–466	Brown Personality Inventory for Children	Matched groups of deaf and hearing; ages 12–14
69. Springer, N., & Roslow	Continuation of the above study	*J. Educ. Psych.*, Nov. 1938	"	"
70. Pintner, R.	Latest Phases of Testing With the Deaf	ANNALS, 1937, 82, 334–335	McAdory Art Test	70 deaf girls
71. Lane, Helen Schick	Measurement of the Mental and Educ. Ability of Deaf Children	*J. Excep. Ch.*, 1938, 4, 169–173		

Author	*Title*	*Publication*	*Tests*	*Number and Type of Subjects*
72. Gregory, I.	A Comparison of Certain Traits and Interests in Deaf and Hearing People	*Child Development*, Sept. 1938, 9, 277–280		128 deaf; 156 hearing; ages 13–18 (all from institutions)
73. Taylor, Harris	Public Day-Schools for the Deaf. A Comparison of the Advantages and Disadvantages of Day and Residential Schools	*Volta Review*, from June 1937 through May 1938	A summary of the evidence for and against each	
74. Zeckel, A., & Van der Kolk, J.	A Comparative Intelligence Test of Groups of Children Born Deaf and of Good Hearing	ANNALS, 1939, 84, 114–123	Porteus Maze Tests	100 congenitally deaf and 100 hearing; ages 7–14
75. Ewing, I. R., & Ewing, A. W. G.	The Handicap of Deafness	Longmans, Green & Co., 1938	Chapter on various tests	
76. Bridgman, Olga	The Estimation of Mental Ability in Deaf Children	ANNALS, 1939, 84, 337–349	Arthur Point Scale, Ontario School Ability Exam., Stanford Revision of the Binet Scale, Healy Scaled Information Test, Randall's Island Tests	90 deaf; ages 6–21
77. Mason, M. K.	Individual Deviations in the Visual Reproduction of the Speech of Two Speakers	ANNALS, 1939, 84, 408–424	Lip-reading and Motion-picture technique	70 college students
78. Fusfeld, I. S.	Research and Testing at Gallaudet College	ANNALS, 1940, 85, 170–184	Breslich Algebra, Stanford Achievement, Psych. Exam., etc.	Deaf college students
79. Morrison, W. J.	The Ontario School Ability Examination	ANNALS, 1940, 85, 184–189	Ontario School Ability	300 deaf children
80. Pintner, R	Artistic Appreciation Among Deaf Children	ANNALS, 1941, 86, 218–224	McAdory Test	333 deaf boys and 384 deaf girls
81. Kelley, N. H., & Guilmartin, M.D.	The Kelley-Guilmartin Speech Test for Deaf Children	ANNALS, 1941, 86, 225–226		
82. Brill, R. G.	The Prognosis of Reading Achievement of the Deaf	ANNALS, 1941, 86, 227–241	Visual Language Tests, Stanford Achievement	90 deaf pupils

Responsible Civic Realism in Problems of Secondary Education of the Deaf

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IT IS popular among educators to measure individuals in terms of intelligence quotients. Probably, therefore, in a discussion of responsible civic realism proposing some change in emphasis of our professional objectives, the use of a quotient indicating the state of our civic health so that the desirability of measures may be judged as they affect this index will be helpful to some.

In this light, the following index of civic health and security in democratic society is submitted:

$$C.H. = B + P + S \times \frac{O}{U}$$

C.H. = Civic health. B = Buying power. P = Productive ability.
S = Spiritual well-being. O = Number of individuals *over* the standard.
U = Number of individuals *under* the standard.

In other words, the degree of our civic health is the sum of buying power, productive ability and spiritual well-being of all our citizens, times the fraction O/U; "O" representing all individuals whose buying power, productive ability and spiritual well-being is standard or above; "U" representing all individuals below that standard.

This equation has practical value in that it should help us keep these essential factors in mind whenever we are obliged to judge any social proposal from the standpoint of its urgency and desirability as a contribution to civic health.

A National School of Trades, Agriculture, and Technical Training for the Deaf certainly would increase every factor in the numerator of the above equation, at the same time materially decreasing the denominator of this C.H. (civil health) rating.

It is here believed this is true to a degree seldom found in a proposed expenditure of like amounts of public funds

for any purpose, educational or otherwise. Since it is intended to increase human productivity, it would repay its initial cost quickly by facilitating all of our other national activities.

With no figures available, we can only estimate the number and proportion of deaf persons who are up to, or above, the standard of buying power, productive ability, and spiritual well-being as compared with the hearing population of the nation.

It is no disparagement of the deaf, in consideration of the very limited opportunities within their reach, to suggest that 15 per cent of our adult deaf population is probably a liberal estimate of the part which has been able to attain that standard.

We know that less than 10 per cent receive even a fair equivalent of a high school education. We know that more than 75 per cent fail to complete the eighth grade. We know that employment opportunities for the deaf are much more limited than they are for the hearing. We know that many deaf people remain wholly or partially dependent upon their families or communities a very great part of their lives, that many live in poverty, and never attain the normal state of responsible self supporting members of their families and communities.

It is rare indeed that we find people, either hearing or deaf, who can maintain a normal standard of spiritual well-being when both their buying power and their productive ability (upon which most of us prefer to depend) are sub-standard.

Spiritual well-being is a most essential factor in the civic health of a democracy.

There is no wish in these lines to paint a dark picture of the condition of our deaf population. It is much brighter and more hopeful than it was prior to the developments which have been attained in the education of the deaf during the last hundred years.

Statistics in the matter are neither abundant nor dependable, but it is certain that the deaf are better off here than elsewhere in the world.

The purpose of this paper in calling attention to their substandard condition is simply this: No family can be very happy if it does not give its handicapped members every possible opportunity to make the most of the faculties and talents which they retain. We may not be able to perform miracles, but we can give these young people the opportunity to develop their remaining faculties in full. "Gather up the fragments. Let nothing be lost."

No democracy, no Christian community, can risk its health by permitting 85 per cent of any section of its population to live below the standards which have been attained by the rest, and do less than the best they know how to correct the situation.

The Opportunity School, or Job Training Center, which has been proposed as a remedy for the substandard conditions of the deaf, has been planned and checked to give standard efficiency in all the factors listed in the chapter, "Present Theories in Vocational Education" in Prosser and Allen's "Vocational Education in a Democracy." Most hearing people can find opportunities for standard training in their chosen work somewhere. Where can most of the deaf people obtain training which even approaches the measures contained in Prosser and Allen's sixteen standards for efficient vocational education?

This deficiency of vocational opportunities for the deaf may perhaps be made more clear by quoting a part of these standards from the book:

> Effective vocational training can be given only where the training jobs are carried on with the same operations, the same tools and the same machines as in the occupation itself.
>
> Vocational education will be effective in proportion as it enables each individual to capitalize his interests, aptitudes and intrinsic intelligence to the highest possible degree.
>
> Effective vocational education can only be given to the selected group of individuals who need it, want it, and are able to profit by it.

The writer has heard Mr. Prosser say, "Ability to profit by Vocational Education means ability to do the job well enough to make a living thereby." (What would your printing teacher in your school reply if it were suggested that his classes represented such a selected group?)

Vocational education will be effective in proportion as the specific training experiences for forming right habits of thinking and doing are repeated to the point that these habits become fixed to the degree necessary for gainful employment.

For every occupation there is a minimum of productive ability an individual must possess in order to secure or retain employment in that occupation. If vocational education is not carried to that point, with an individual, with that individual it is neither personally nor socially effective.

It is at this point that the most tragic mistakes in our present system of vocational education for the deaf occur. Probably more than half of our pupils either graduate from the academic department or are obliged to leave school for some other reason, before this point of minimum efficiency in their vocational education has been reached.

Vocational education will render efficient social service in proportion as it meets the specific training needs of any group at the time they need it and in such a way that they can most effectively profit by the instruction.

Most of our pupils are only beginning to understand the significance and value of their vocational courses at the time they leave our schools. Then when they most need vocational training their opportunity to get it is cut off. In this respect our present arrangements are deplorable. Deaf people simply can't get vocational training when they need it most or when they can most effectively profit by it.

Vocational education will be socially efficient in proportion as its methods of instruction and its personal relations with learners take into consideration the particular characteristics of any particular group it serves.

This we can do in our present schools for the deaf, as far as we go, but we seldom finish the job. Most of our deaf pupils who do finally finish their training, are obliged to finish it on a job, or in a school where their special characteristics are given slight consideration, where they are poorly understood, where they understand with great difficulty.

The Co-operative Plan or the Job Training Center for the Deaf, previously described (See ANNALS, September 1940, pp. 347-350), would make this transition much easier and enhance the chances of success.

Isn't it time for our profession to organize, together with all friends of equal opportunity for the deaf, to make this

equality of opportunity a reality, to add to the C.H. (civic health) of our nation by giving more than 80 per cent of our young adult deaf the opportunity to pull themselves up to, or above, the nation's standard in buying power, in productive ability, and in spiritual well-being.

The Oregon Program for Conservation of Hearing[1]

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Portland, Oregon

INTRODUCTION

THE Oregon program for conservation of hearing has evolved from experiences of this and other states. Mass hearing surveys have grown to substantial proportions since the introduction of the group or phonograph audiometer in 1925. Approximately 2,000,000 children are tested annually in 1,000 cities and 120 counties of the United States. In Oregon the Division of Maternal and Child Health, in cooperation with the schools, tested 65,750 children in 32 counties in 1937 to 1939. The widespread use of the audiometer has given ample proof of the existence of many hard-of-hearing children. Difficulty in the past has been due to a limitation of personnel and the fact that a definite plan and program of insuring medical and educational attention, other than urging local health officials to inform the parents of the need for medical care, was not possible.

Absence of complete programs of educational and medical adjustment is reflected in the failure of communities to follow up the deficient cases pointed out to them. A recent inquiry among cities in the United States which give periodic hearing tests developed the fact that only 68 out of 201 reporting could furnish the number of children seen by physicians in a given year (49 cities reported examinations by family physicians or otologists and nineteen reported examinations by school physicians or clinics), and only 35 of these reported the number of children improved after medical attention had been given. These facts demonstrate

[1] From a report issued by the Division of Maternal and Child Health, Oregon State Board of Health, Portland, Oregon.

the inadequacies of a hearing program which is limited to measurement of hearing.

Hearing conservation can be most effectively administered by the joint participation of all agencies interested in the general and special education and the physical welfare of school children. Thus, the public health, school and health education departments, together with special education advisers, the state department of education and physicians may combine their special abilities in the successful consummation of hearing health and readjustment of hearing handicapped children.

Purpose of Hearing Conservation

The fourfold purpose of hearing conservation is, first, to discover the genuinely and potentially hard-of-hearing children in order that their hearing may be conserved; second, to obtain medical attention for all these children; third, to furnish suitable teaching readjustments for the more severely handicapped; and fourth, to educate parents and future parents to practise better hearing health than did their predecessors. Although the second purpose is a proper and satisfying aim, a substantial prevention or reduction of the so-called handicapped cases may be effected by obtaining prompt medical examinations and necessary treatments for all of the deficient cases. Hence, the goal of hearing conservation should be considered unattained if all of the discovered cases do not have the benefit of the entire program.

Requirements of a Complete Program

A complete program of hearing conservation presumes the co-operation of the entire community, including that of the local health department, medical society, schools and civic organizations. It also assumes that the child will be given all the professional services necessary: (1) To regain or preserve whatever hearing is possible; (2) to bolster his physiological resistance to further attacks; and finally, (3) to establish his security in a socio-scholastic environment that will permit him to achieve at his natural rate.

Certain procedures of a complete program may appear

quite simple to the conservationist but their handling requires much more technical care than some hearing enthusiasts have practised in recent years. Several steps are required to insure the discovery and adequate follow-up of each deficient-hearing case until his ultimate and desirable disposition is accomplished.

An Interested Community Is a Prerequisite for Hearing Conservation

Communities whose officials show a genuine interest in the welfare of the hearing handicapped child will be more likely to finish a program that has been initiated for them. The Division of Maternal and Child Health of the Oregon State Board of Health is sponsoring a hearing conservation program in the public schools of Oregon. Before final arrangements of the tests are made, the Division must receive assurance of the complete co-operation of (1) physicians of the community, (2) school officials, and (3) local health department officers. The Director of the Division and the Consultant in Hearing and Vision outline the program to the medical and school officials and explain that the success of the program depends upon observance of certain details; for example, adequate time of the nurses for follow-up of the deficient cases; provision for medical examination, care and advice; co-operation of the school personnel in the testing, readjustment of certain pupils and the continuation of a hearing health education program. Upon receipt of assurance that all agencies will co-operate, preparations are made for the testing of the school children.

The Hearing Conservation Program

I. *ADVANCE PREPARATION.*—Several weeks before the tests, the local health officer explains the details of the program to the superintendent of schools. Suitable testing rooms are selected and a tentative schedule of testing is arranged. The hearing examiner may also assist in these preparations. The health officer leaves with the superintendent printed instructions for each building. Each principal is requested to go over these instructions with his teachers

so that they understand and appreciate the need of assisting in, and observing, the details necessary to a satisfactory conduct of the tests. Although these requirements are important, they are minimal in order that the school routine be disturbed as little as possible.

II. *ADMINISTRATION OF TESTS.*—Two types of tests are administered, the first being a rough screening process, which may be repeated on certain pupils; and the second, a precise, scientific measurement of the hearing of those screened in the preliminary tests.

A. *Group Tests.*—Mass testing of pupils in all grades is neatly and effectively done with the phonograph audiometer. This instrument is a special type phonograph with magnetic amplifier to which 40 receivers in series are attached. Children sit at desks and listen to numbers heard through the receivers and write them down on test sheets. The voice calling the numbers diminishes in loudness until only the keenest ears can hear it. Children who stop writing too soon are automatically screened out of the group. Provided preparations are made in advance and the procedure carefully observed, as many as 120 children can be tested in a 55 minute period with little disturbance of the school routine.

1. *First Group Test (First Screening).*—All pupils in the system are tested. Pupils in the second through twelfth grades are tested in groups. It is imperative that first grade children be tested in order to locate at the earliest opportunity those with hearing defects and institute immediate medical relief or schoolroom adjustment of those definitely in need of it. First grade pupils are tested in groups of six by the monitor method. Six older pupils are seated in different parts of the room. First-grade children are seated with them. The younger pupils whisper numbers they hear through the receivers to the older pupils, who record the numbers whispered. If they fail the test, the examiner later tests them individually. Because of immaturity, second- and third-grade pupils who fail two group tests are retested by the monitor method.

2. *Second Group Test (Second Screening).*—Children who fail to hear well enough are retested on the group audiometer

the same day if there is time. Factors of anxiety, adaptation, immaturity and misunderstanding, as well as noise, are usually eliminated by retests.

B. *Individual Tests (Pure Tone).*—Pupils who show unsatisfactory scores in the two preliminary or screening tests are given a pure tone audiometer test at a later day. An interval of time between the group and individual tests allows any child with a cold to recover and thereby permits a fairer test of his hearing. The pure tone audiometer tests acuity of hearing in musical octaves ranging from 128 to 8192 vibrations or higher. Provided the testing is done with great care in a very quiet room and by a properly trained technician, pupils who need medical referral can be selected with a high degree of reliability. The audiogram obtained from the test furnishes the physician with evidence of the need of observation for pathology.

III. *FOLLOW-UP OF TESTS.*—Too much emphasis cannot be placed on the post-testing phase of the hearing conservation program. The important work begins *after* the tests and *after* the children have been carefully screened from the total population. Two important phases of this work are initiated at once. A prompt medical study of each child is made in order to determine the cause, degree and prognosis of the defect. The school department observes the reactions, attitudes and achievement of the child with the purpose of adding this information to the medical report to permit a final decision on the educational needs of the child who is definitely handicapped.

A. *The Medical Follow-Up.*—

1. *Medical Inspection Preliminary to Referral for Otological Examination.*—The local health officer inspects all children who are listed by the technician as deficient in hearing. He may decide that one or two borderline cases need no immediate attention but should be observed from time to time by the health department. This reduces the number of follow-up cases. The medical officer's positive statements, on the other hand, about the remaining children are additional facts to present to the parent.

2. *School Interview with Parents.*—If the child's audio-

gram and medical inspection indicate a need for otological examination, the parent is invited to school for an interview with the examiner. The latter explains to the parent that three carefully administered tests and a medical inspection demonstrate clearly the need of medical attention for her child. At this interview he not only observes the attitude of the parent and child but gives printed information regarding hearing health and medical aspects of hearing tests. The public health nurse completes the interview by taking the hearing health history, obtaining the mother's promise to go to a physician, getting the latter's name, and giving her a copy of the audiogram to take to the physician. The nurse also obtains information about the financial status of the family, if this is not already known, and makes plans for care in other ways when this is indicated.

Value of Having Parent Present at an Interview.—The presence of the parent at a school interview has several advantages. She sees the testing instruments and receives an explanation from charts, which is more convincing than the statement of a nurse at a home call. The examiner learns the attitude of the parent. If she is skeptical he takes time to demonstrate the exact sounds her child failed to hear and endeavors to convince her before she leaves. Valuable publicity and education are extended to each parent and indirectly to her acquaintances. The number of home calls is materially reduced for the nurse. (As many as 70% of invited parents have come to the interviews.) Finally, parents are more prompt in taking children to the physicians.

3. *The Nurse's Home Follow-Up.*—The nurse makes home calls on parents who are not contacted at the school interview. She obtains similar information and especially data concerning the parent's intention to take the child to a physician. If the family is receiving public welfare assistance or cannot afford even the first examination, the nurse obtains help according to the local plans for care of such cases. She leaves with the parent printed instructions on hearing health.

4. *The Medical Examination.*—A copy of the audiogram is sent directly to the physician's office as soon as the parent

indicates which physician she plans to consult concerning the child's hearing. This copy asks the physician for a diagnosis and prognosis of the child's hearing. His advice is also sought on the subject of schoolroom adjustments where the prognosis indicates a possible need.

5. *The Efficacy of Medical Treatment.*—The physician is not only asked to report a diagnosis but also the treatment given the child, together with the indicated improvement in hearing. When physicians have audiometers, they are urged to give the local health department occasional reports of the child's improvement in hearing as the treatment continues. The examiner likewise endeavors to recheck the hearing of the deficient pupils several months later to note the improvement or additional deterioration of hearing. Cases not yet having medical examinations and showing continued losses are again followed up by the nurses. These progress reports are extremely desirable to have because they indicate how many children went to doctors; how many of them improved in hearing or didn't improve; and how many of those who did not go to doctors have better, the same or worse hearing. This information is the most convincing proof of the efficacy of hearing conservation, both to the public and to the medical profession.

6. *Final Classification of Deficient Pupils as to Follow-Up.*—Through succeeding calls and interviews with parents, the health nurse finally classifies the hearing cases on the basis of success of follow-up.

a. Children already seen by doctors and receiving treatment.
b. Children whose parents have promised but who have not yet taken them to physicians.
c. Children whose parents do not fall in the public welfare class but claim no financial resources, or who give no co-operation or refuse.
d. Children whose parents have been approved for medical relief by public welfare agencies.

7. *Disposition of Difficult and Needy Cases.*—Considerable ingenuity and resources of the community must be drawn upon in order to effect a satisfactory disposition of

the cases that fail to reach the offices of physicians promptly. The following resources may be used: (a) Local health departments will be able to solve the problems of some of this group through referral to hospitals and medical clinics available to them; (b) service clubs and charity sororities may assist through their handicapped children committees; (c) parents who refuse to co-operate may often be convinced by prevailing upon the families' ministers or intimate friends to enlighten the parents; (d) uncared for cases will be listed and presented to the otological groups for their guidance and suggestions regarding disposition.

B. *Educational Follow-Up.*—

1. *Preliminary Scholastic Observation.*—As soon as the child is found in need of referral for otological examination (some cases will already be known to have permanent deficiencies in hearing), he is reported to the principal of the school. It is suggested to the principal that the child be observed in the schoolroom in order to notice any attitudes, responses or failures that might be attributed to a reduction in hearing. The principal is warned not to consider the child at this time to be definitely hard of hearing, for medical treatment may restore the hearing or the child may spontaneously recover. However, pending medical examination and treatment, it is advisable to observe the child.

2. *Conference on Educational Needs of Child.*—When the health department obtains the prognosis from the physician, the principal is notified of this fact as well as of readjustments suggested by the physician. The principal, the child's teacher, and the public health nurse confer on the particular needs of the child, if any, in the matter of his handicap and special help in the schoolroom. In certain instances, the teacher of special education, representatives from the State Department of Education or the Superintendent of the State School for the Deaf, are called in for consultation. The counsel of general and special education and health departments affords for the hearing-handicapped child the opportunity to advance in his school work with the optimum assistance and guidance.

Decisions concerning the hearing-handicapped cases will

vary with their needs. Some children will need to be seated closer to the teacher during recitations. Some may need to be seated with the good ear toward the class. A few cases may need formal lip-reading instruction. Some may need tutoring in grade subjects. Beginning hard-of-hearing children may need extra help in phonics, speech and language. In certain cases, it will be advisable to give the child special training at the State School for the Deaf in order to prepare him to return to the public schools later on. In other cases, the parent will be given suggestions on helping the hard-of-hearing child at home.

IV. *HEARING HEALTH EDUCATION—(Community Instruction).*—Successful fulfillment of the initial program and continuation of hearing conservation can only be achieved through enlisting the help of all persons in the community. The Consultant in Hearing and Vision will collaborate with the superintendent of schools, the local health officer and the health education personnel to arrange a plan of publicity and continued education designed to explain the value of hearing conservation to all members of the community, individually and as a whole. Such a program should include the following activities:

A. Advanced and subsequent newspaper copy sent to the newspapers.

B. Address Parent-Teacher and civic groups during the period of the program. Arrange for periodic talks before these groups by local medical men.

C. Explain the features of the program to the local health department staff and other social service groups.

D. Furnish every local physician with an explanation and purpose of the hearing conservation program. This may best be accomplished at a meeting of the local medical society before or during the testing program. The physicians are informed that the efforts of the health and educational staffs are directed to arranging for the child to be brought to them for diagnosis and recommendations. It is imperative that all physicians be informed in order to insure, first, an understanding of the program by the local physicians; second, their careful study of the audiograms and their im-

plications; third, their deliberation on the educational as well as the physical needs of the children; and fourth, a consideration of possible need of otological consultation.

A letter of explanation of the program is left at the offices of all physicians who are not present at the local medical meeting.

E. A final teachers' meeting is called by the superintendent of schools to inform the teachers of the results of the tests, discuss typical and special needs of children and hear general and specific recommendations that may effect a better understanding of the pupils' problems and hence reduce the handicap under which such children are working. Separate meetings of high school and elementary teachers may be more convenient.

F. Collaboration with health education leaders of the state and the Hearing Committee of the Oregon State Medical Society is making possible the distribution of special instructions to parents and teachers on the subject of hearing health programs. Collaboration with the State Department of Education and the State School for the Deaf permits the issuance of instructions to teachers and parents regarding methods of assisting or specially training those children found severely handicapped for hearing. This collaboration effects a more complete knowledge of hearing health in the routine school instruction of pupils.

Appendix

Form A. Pupils' names are listed in advance of the test. Satisfactory scores are checked off at once. Audiogram score is written in after the medical inspection is completed. Test results are transferred to pupil health cards.

Forms B and C are given in advance of the testing date to the principal, who discusses their details at a teachers' meeting.

Form D. The phonograph audiometer testing chart is distributed to the pupils in their rooms who bring it, filled out, to the testing room.

Form E. Is given to the principal for scholastic and personality information of all pupils who fail the two group audiometer tests. It is attached to the school department copy of Form F when the latter is sent to the principal.

Form F. Program control chart for each child given pure tone test. State, Physician's and Parent's copies are padded in this order and written simultaneously through Steps I, II, III, and IV. Parent is given her copy at the interview. Physician is sent his copy when parent selects him.

Health Department and Principal's copies are padded and written simultaneously, after school interviews with parents are completed. Public health nurse uses her copy for follow-up. Principal uses his copy for observation of the child prior to final recommendations.

Form H. Invitation to parent to the school interview. Sent after medical inspection is completed.

Form I. Letter of explanation to physician, to be left at offices of all physicians in the town, or sent with audiogram to physician in neighboring city.

Form P. Helping the Hard-of-Hearing Child in the Schoolroom.* One copy given to principal or copies distributed at teachers' meetings.

Form Q. Helping the Hard-of-Hearing School-Age Child at Home.* Given to parent when medical decision indicates he is hard of hearing.

Form R. Helping the Child Who Needs Lip-Reading.* Given to Parent when loss is confirmed and need indicated.

Form S. To the Parents of Very Young Hard-of-Hearing Children.* Distributed as indicated for Form R.

Form T. A Hearing Health Program for the Parents. Given to each parent at interview.

Form U. A Hearing Health Program for the Teacher. Copy given to principal; also distributed at teachers' meetings.

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* These forms were originated by Dr. Warren H. Gardner and Miss Laila Larsen at Indiana University Speech and Hearing Clinic. They have been amplified and brought up to date. The complete report gives the details for each of these forms.

Survey of Hearing in Public Schools of the State of Maryland

By IGNATIUS BJORLEE, LL.D.

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OF THE 42,811 white children examined in the State of Maryland, exclusive of Baltimore City, 36,932 were in the 2nd, 5th and 8th grades, while 5,879 represent children from all other grades examined at the special request of their teachers. Of the children examined in the above-named grades, 32,269 had normal hearing, making 87.4 per cent; 3,805 children, or 10.3 per cent, showed a hearing loss of less than 15 per cent; while 858 children registered a hearing loss of 15 per cent or more, making 2.3 per cent.

So many factors enter into the calculation of hearing loss in the lower brackets that 15 per cent loss in one or both ears is not considered serious unless a chronic ear condition is present. As the figure dwindles, the loss obviously becomes of minor consequence. Accordingly, 2.3 per cent represents the proportion of children throughout the state whose hearing loss should be given consideration.

The practical nature of this survey rests in the fact that children mentioned in this last-named group were reported to the county superintendents and to the State Department of Education with the recommendation that they be given periodic examinations by a competent physician.

It is very gratifying to report that of all the children examined, there are but few with sufficient hearing loss to warrant their being sent to a special school for the deaf. The teachers are advised to assign front seats to children with appreciable loss of hearing that they may be given additional consideration in order to maintain their grades.

Mrs. Mabel Moylan Elliott has been in charge of this work for two years and is this year continuing with a re-examination of the 858 children who, as above stated, showed a hearing loss of 15 per cent in the first examination.

A classification of the findings with respect to hearing

loss in these 858 children (or 2.3 per cent of the total number examined) is presented herewith:

Loss of Hearing in One or Both Ears		*Number of Children*
15	0	87
15	5	97
15	10	150
15	15	56
20	0	44
20	5	41
20	10	46
20	15	46
20	20	23
25	0	18
25	5	11
25	10	21
25	15	9
25	20	21
25	25	11
30	0	9
30	5	7
30	10	5
30	15	2
30	20	10
30	25	11
30	30	3
35	0	7
35	5	1
35	10	5
35	15	9
35	20	3
35	30	5
35	35	1
40	0	9
40	5	4
40	15	3
40	20	3
40	25	3
40	30	1
40	40	2
45	0	6
45	5	3
45	10	1
45	25	1
45	30	1
45	35	2
45	40	2
45	45	2
50	0	5
50	5	4
50	10	2
50	20	1
50	25	1
50	30	1
50	40	1
50	45	1
50	50	2
55	0	4
55	15	1
55	20	2
55	30	1
55	50	1
60	0	4
60	5	4
60	20	2
65	0	1
65	10	2
65	15	2
65	20	1
65	40	1
65	50	1
65	60	1
70	0	1
70	5	2
70	70	1
75	40	1
75	60	1
80	10	1
80	50	1
90	25	1
Total loss		1
		858

An Outline for Making Scrapbooks and Posters Effective in Foods and Homemaking Classes

By EDNA I. PAANANEN, B.A.
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SCRAPBOOKS and posters when properly used may well be termed silent teachers as they can convey more information in a subtle way than many hours of recitation would do.

Here in Missouri we have found them particularly useful. The course of study we employ is a broad one and necessitates a good deal of reference material. Books and blackboard work suffice in certain cases, but for the most part, the addition of scrapbooks and posters does much to help stress important points.

The scrapbooks we use are the ordinary ten-cent-store variety, each one chosen for the subject matter it is to cover. The posters are of heavy white cardboard. To do them real justice we had frames made for them. They were then painted to match the color scheme of the rest of the kitchen. A slit in one end makes it easy to remove the posters. Framed in this way they give a much more presentable and important appearance than unframed posters could be expected to have.

Below are listed a number of ideas we have already tried out and have found extremely useful.

SCRAPBOOKS

I. *Foods*

Aims:

a. to teach the girls to read labels for information about contents
b. to teach them to buy with discrimination
c. to extend general knowledge about brands and of the various types of packaged and canned goods
d. to provide illustrative material for class discussions
e. to provide purposeful reading matter for the few idle moments before classes are dismissed

Lay-out:

a. material divided into proper food groups
b. illustrations of as many brands and varieties of each individual product as possible
c. indexed alphabetically
d. emphasis on grades and standards when possible

II. *Household Equipment*

Aims:

a. to provide easily accessible and accurate material to accompany discussions on the use of and purchasing of household equipment
b. to arouse interest in names and individual peculiarities of various articles for home use
c. to use with course in home decorating
d. to provide reading material that centers on the home-making idea

Lay-out:

a. book divided into "rooms" with a certain number of pages for each room
    1. subdivided into particular types of articles for the room in question
b. indexed by rooms with subtitles for articles belonging to each particular room
c. current prices listed with each article
d. as many brands and varieties of each article as possible listed

III. *House Decorating*

Aims:

a. to serve as easy reference for lessons in home decorating
b. to offer a casual way by which pupils may pick up a general knowledge on simple points in home decorating
c. to create an interest in home beautifying
d. to help instill rules of technique

Lay-out:

a. divided into subject headings:
   i.e. 1) color harmony
   2) window treatment
b. use of as many subject headings as are felt necessary
c. use of as varied illustrative material as possible
d. use of material that can be understood by pupils

Posters

I. *Meal Planning*

Aims:

a. to show that meals need not be stereotyped but may be changed in various ways and for various causes
b. to provide accessible patterns for basis for laboratory meals
c. to show how different foods can affect food bills
d. to show how different methods of preparation can affect the price

Lay-out:

a. patterns for different types of meals
   1) light
   2) moderate
   3) heavy
b. illustrations showing meals on different price ranges
   1) cheap
   2) moderately priced
   3) expensive

II. *Vitamins and Minerals*

Aims:

a. to make the study of nutrition less tedious and to arouse personal interest
b. to accompany lessons, relieving the more dull printed page

Lay-out:

a. one poster for each vitamin and important mineral

b. brightly colored illustrations of each important source

III. *Carbohydrates, Fats and Proteins*

Aims:

a. to further the ability to separate one food group from another
b. to accompany written lessons in nutrition
c. to assist in planning well-balanced menus by increased knowledge of food values

Lay-out:

a. one poster given to each food group
b. most important sources of each shown

IV. *Axioms*

Aims:

a. to offset certain bad habits that may be prevalent
b. to offer helpful hints in lines of work the pupils are interested in
c. to give pertinent information that has proved to be difficult to put over
d. to emphasize certain points that are frequently used

Lay-out:

a. accompanying a worded axiom with an illustration peculiarly descriptive of the point presented
b. use of axioms that are understandable and strongly enough worded to give results
c. use of illustrations that will drive the desired point home

Is Loss of Hearing a Tragedy?

By Albert Berg, M.A.
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When seven years old, that is seventy years ago, I attended a small private German school in my native Indiana town. It was a red-brick, two-story building. Our family home was atop a hill about a mile distant. My teacher was a thick-set, gray-haired typical Teuton. I do not remember how long I was a pupil there, but recall having previously attended a large public school and being transferred to the other. I acquired a smattering knowledge of both German and English in my early youth, with the result that my speech became unconsciously intermingled, causing misunderstanding and embarrassment in my dealings with strangers as I grew older, and, after losing my hearing, I became so self-conscious and diffident that I neglected to continue the development of my speech, lost confidence and resorted to the use of pad and pencil in communicating with hearing persons until the practice became a fixed habit.

One morning in mid-winter I was taken sick during recitations and the German schoolmaster sent me home. It was snowing hard and had been for some time. Walking up the steep hill was normally tiring and in my weakened physical condition, with the deep snow to negotiate, my strength was sapped and I was completely exhausted upon reaching home. My mother put me to bed. Cerebrospinal meningitis developed and I was confined for several weeks, much of the time on the border line of insensibility and delirium. I remember little of what occurred during that critical time, nothing of my mother's ministrations, nor anything of the doctor's visits. I do not even recall ever seeing my father in the sickroom, but vivid in my recollection is the day of my early convalescence when I awoke, as if from a very long sleep, mind in a maze, to see mother and another woman seated near the bed in which I lay, talking to each other. Noting their lip movements and

failing to hear what was being said, strain my ears as I would, I was perplexed, but too weak and listless to speculate upon what was wrong with me. Gradually came the realization that I had lost my sense of hearing. That it was my misfortune never to hear again did not impress itself upon my understanding until a long time afterward, and I did not become depressed or cynical. I was too young to realize the irreparable loss and how it was going to affect the rest of my life. I retained my limited, uncertain power of speech and continued the happy association with my neighborhood hearing playmates, which buoyed my youthful spirits for the time being.

My recollection is quite clear about that September day in 1872, when my father took me by train, for my first year, to the State School for the Deaf. I remember the kindly superintendent, Dr. Thomas McIntire, receiving us in his office, an elderly man of medium height and slender build, slightly stooped, spectacles perched near the tip of his aquiline nose, short beard streaked with gray. He was clothed in black, his Prince Albert coat and whole outfit suggesting the minister. His eyes sparkled with kindness and sympathy, but I was too blind with love for father and fearful of losing him to respond to his advances, and when the time came for father to leave, I clung to him desperately, sobbing as if my heart would break. He got out of the room finally and I was stopped from following. Running to the open front window at the other end of the room and tiptoeing and stretching my neck, I was just able to see over the sill. There was my father hastening away, down the stone steps of the massive, colonnaded entrance. I cried in despair and attempted to clamber onto the window abutment with the intention of jumping to the cement walk, twenty feet below, but was restrained.

Thus began the unhappiest day of my institutional life. This unhappiness, though, did not last long. Dr. McIntire's tactful understanding of child psychology soon won me over. I got adjusted to things as they came and made friends with the other little boys in the school, happy friendships that lasted a lifetime.

I began at once to learn the sign language by which the pupils talked among themselves and with the officers and teachers. Dr. McIntire was himself expert in its use, which accounted for the affection we all felt for him.

As I became older and my skill in the use of the language increased, new interests developed. Home and kindred became a soothing memory. Our reunion was something to look forward to as each summer vacation neared, and I was happy and contented, all the while conscious and appreciative of what was being done in my behalf.

In a few years I completed the requirements for graduation and then continued my studies at Gallaudet College, in due time graduating therefrom. Shortly afterward I started teaching school and continued in the profession until my retirement on a pension.

The misfortune in having been deprived of hearing in my early immaturity was probably a blessing in disguise. I was the only one of my father's eight children to attain a higher education. Straitened circumstances made it necessary for the others to shorten their schooling and take employment to help support the family. Board and tuition at the state school which I attended being gratuitous, as well as at the College maintained by the Federal government, it was only a nominal expense to any of us to keep me in school.

Had I not become deaf, it is probable that my education would not have been any further advanced than that of my brothers, my life occupation that of shoe repairing, a trade for which I had been trained in my late boyhood, instead of having been a teacher for nearly fifty years. Regardless of the great sacrifice my loss of hearing entailed, I cannot feel, everything considered, that it was a tragedy.

If there was anything calamitous about my experience as here related, it was the unfortunate neglect of the precious opportunity I had to preserve and improve my ability to speak.

Student-Edited School Publications

By Alan B. Crammatte, M.A.
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Recent years have seen a growth of interest in student-edited school publications. Since the inception of *The Hilltopper,* a student-edited newspaper at the Minnesota School, a number of schools for the deaf have experimented with student publications of one sort or another. Concurrent with these experiments, there have been changes in the formats of some school publications, a few schools shifting to a newspaper format instead of that of a magazine.

In some instances these innovations have been quite successful, and in other cases they have been found to be impracticable in the situations where tried. Naturally the experiments brought discussion and a controversy of some magnitude has been carried on in the "little paper family." The discussions covered a wide range, including not only the pros and cons of student publications but also questions of format and style.

Before considering the specific questions of whether a student-edited publication is justifiable and of what type it might be, an outlining of the purposes of school publications seems in order. A survey of school papers made in 1932 by Mr. John A. Gough, now superintendent of the Oklahoma School, revealed:

> . . . the four main purposes of the papers as recognized by the editors are: (1) to teach printing, (2) to assist in the literary work of the school including the development of reading and composition, (3) to establish and maintain contact between the parents and the school, and (4) to provide means of contact between the alumni and the school. To these four aims may be added two minor aims—(5) to bring the general public in touch with the school and with the deaf generally, and (6) to serve as a medium for the exchange of professional thought.[1]

A cursory survey of school papers of recent date which state their objectives in the editorial masthead shows that the aims of school publications now are, in the main, similar

[1] Gough, John A., The Status of the School Paper in American Schools for the Deaf. Unpublished Master's thesis, Gallaudet College, Washington, D.C., May, 1932, p. 12.

to those found by Mr. Gough. In fourteen papers carrying a statement of objectives, Mr. Gough's six aims were mentioned with the following frequencies:

Aims	*Frequency*
1. To teach printing	13
2. To assist in the literary work of the school	13
3. To establish and maintain contact between parents and school	14*
4. To provide means of contact between alumni and school	5
5. To bring the general public in touch with the school and with the deaf generally	12*
6. To serve as a medium of exchange of professional thought	1

It may be seen that the six aims remain the same, with possibly a tendency to put more stress on the public relations aspect. Three papers specifically listed contact with the general public, while the remainder of the twelve noted mentioned patrons, friends of the school or those interested in the school.

It seems evident from the aims stated that the main purposes of a school paper are: to teach printing, to assist in the literary work of the school, to establish and maintain contact between parents and the school and to publicize the work of the school and the deaf in general. Contact with alumni and exchange of professional thought seem to be relegated to minor aims. In regard to these diverse purposes, another quotation from Mr. Gough's thesis is pertinent:

> The influence of the paper, however, far over-reaches the shop and the school room. It is at once a professional organ for teachers of the deaf, an administrative tool in that it tends to unify the interests of the school, the child and the home, a publicity agent for the school, and a newspaper inasmuch as it carries the news of the deaf to the deaf throughout the state or even the entire country.[2]

With the six aims outlined by Mr. Gough in mind, let us first present the arguments in regard to the two types of school publications as offered by editors of "little papers."

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* Some confusion may exist in regard to aims three and five since five of the papers listed contact with patrons or friends of the school; since in most cases it was obvious that "patrons" was intended to be a generic term including parents as well as others interested in the school, these five were included in both aim three and aim five.

[2] Gough, *op. cit.*, p. 2.

The matter of practice in printing can probably be disregarded, for the students of printing will secure practice no matter what type of publication is printed.

In achieving the aim of assisting in the literary work of the school, the student-edited publication finds its strongest support, for it provides motivation and purposive practice in composition and reading matter which is of vital interest to the students. Opponents of the student-edited paper hold that motivation is limited to but one type of English—journalism—and to a small group of the whole student body. They maintain that the Class Notes section of a staff-edited publication better meets the needs of the whole student body, comprising, as it does, all the grammar as well as the higher grades with only a small percentage of students of high school calibre. Also, it is argued that the student-edited publication may be over-edited by teacher advisers due to the many grade levels and the language difficulties of deaf children. Concerning this, Mr. James N. Orman of the Illinois School has the following to say:

> To any one familiar with the peculiar rôle of the language difficulty in the education of the deaf, the query is justified whether a false impression is not allowed to arise on the part of the average reader about this difficulty.
>
> However much it may be claimed that such a paper does serve the function of an exercise in newspaper production, the fact remains that there is still a wide gulf between the *bona fide* high school journalism venture, largely the work of the students themselves, and student publications in schools for the deaf.[3]

Mr. Orman sums up opposition to the student-edited publication on the score of the third objective, contact with parents, thus: "Parents of children who come to a school for the deaf must be orientated about the work of educating the deaf."[3] This is a need which all educators of the deaf recognize, and student-edited publications, in the purest sense, do not meet it adequately. The student-edited paper will give news of activities of the school and occasionally illuminating articles on problems of the children, but if wholly the work of the students, it cannot contain the discussions of educational, psychological and social prob-

[3] Orman, James N., "The Student Newspaper," *The Illinois Advance* (vol. lxxiii, no. 2), November, 1939, p. 6.

lems of deafness that are to be found in the staff-edited publications.

The argument in the preceding paragraph will hold also in the matter of publicizing the school on a wider scale. An activity publication would have even less appeal to the general public than to parents inasmuch as parents have an initial interest in school activities because of their children's presence in the school.

Alumni news could probably be handled as well by one publication as by the other, with the student-edited paper having a shade the stronger appeal since it would be concerned more with school news than with professional matters.

In the student-edited publication, the exchange of professional opinion is reduced to an absolute minimum. Of this, Dr. Ignatius Bjorlee of the Maryland School says:

> The profession would sustain a real loss if every school would follow the example of making their L.P.F. representative a small sheet calculated for home consumption only, and in which no thought and attention were given to the stimulating influence of the exchange of ideas. The teachers in one section of the country can familiarize themselves with the best thought of the profession generally by reading the exchanges. Our official organs, namely, the ANNALS and the *Volta Review*, simply are not adapted to the lighter form of friendly banter which has often been most thought provoking.[4]

Familiarity with the contents of these "little papers" would seem to indicate that, although the aim is not frequently stated in the editorial masthead, the exchange of professional thought is a major objective of many school papers. The frequency with which meritorious articles are quoted in the l.p.f. supports this thesis, as does the presence of exchange columns in several of the papers. Articles on professional problems also aid in the task of orientating parents to the educational situation and familiarizing the general public with the education of the deaf.

After presenting the bare pros and cons of the subject, it seems that the staff-edited publication is decidedly the more desirable of the two. However, such is not entirely the case if the weight of various factors and conditioning

[4] Bjorlee, Ignatius, "Magazine Versus Newspaper Style of Publication," *The Maryland Bulletin*, lx, March, 1940, p. 108.

arguments be taken into account. For example, motivation of English composition and reading cannot be lightly brushed aside, for here we touch on what has long been the core of curricula in schools for the deaf—language training. Any device that will aid in developing spontaneous use of natural language is justified, if within the means of the school. The Class Notes in a staff-edited magazine do not provide the motivation that a student-edited publication can; except under an inspired teacher they tend to degenerate into mere exercises in composition. That the motivation from a student-edited publication need reach only a few is open to question; the staff of the Minnesota *Hill-topper* numbers 42, a large percentage of the student body, all things considered. Nor is it necessary that the student staff be limited only to those in the upper grades. Since schools for the deaf include all grades, it would seem permissible to have a department devoted to news of the lower grades reported by younger children in language suitable to their grade levels. That the younger children are capable, under supervision, of turning out a satisfactory paper was proven in the Louisiana School; the low intermediate classes there published a small mimeographed monthly newspaper, a delightful publication, complete even to comic strips drawn by the children and read avidly by the younger children and their teachers as well. A student-edited publication is more widely read by the student body than a staff-edited publication and, therefore, would seem better to motivate reading. No doubt, a greater pride of creation may be gained through a publication by and for the students.

The danger of the hypocrisy of over-editing by faculty advisers must be recognized, but it is not at all necessary that the publication be one "that represents only fifty per cent or less the student's production."[5] This is largely a matter of professional ethics; the ethical principle—and something of a quietus for those who fear the quality of student output—is stated by Greenawalt in his twelve guiding principles for public school papers: "Many errors in a school publication are more to be desired than a school

[5] Orman, *op. cit.*, p. 6.

publication written by the faculty."[6] Too, in comparing school-for-the-deaf publications with high school newspapers it must be borne in mind that the high school papers are the result of at least a year of formal instruction in the journalistic idiom, are edited by a student editor of several years' experience and are at least read over by the journalism teacher before they go to press.

Even on the score of parental contact, some qualification can be made in favor of the student-edited publication. Parents can be assumed to be more interested in what their children are actually doing than in what they can or should be doing; a student publication would tend to emphasize activities rather than theory. Still, educating parents to the problems peculiar to the education of the deaf is a recognized need and a student-edited publication does not meet this need. Space for this type of matter in a student-edited publication might be provided by a parents' page, a superintendent's corner or the like.

A question might even be raised as to the part which a school publication plays in bringing the work of the school before the general public. It may be well to remember that the subscribers to school publications are for the most part persons already interested in the school and that the paper reaches few beyond this limited circle. While it is true that a school paper strengthens ties already made, it is doubtful whether it brings many new friends. Wouldn't active and persistent publicity in the public press reach a larger audience? Public demonstrations, "open houses" and lectures by faculty members probably present a more dramatic and concrete picture of the work of the school, too. The argument presented above may seem an evasion of the issue, but it is given as a qualification only; that publicizing the school is an objective set for the school paper is recognized and that a student-edited publication cannot fully achieve this objective is recognized as well.

Concerning the question of providing a means of exchange of professional thought, Mr. Gough states the case clearly:

[6] Greenawalt, John, School Press Management and Style. McGraw-Hill Book Company, New York, 1930, p. 4. (In Gough, *op. cit.*, p. 8.)

> Although educators of the deaf now support three professional magazines, opinion is fairly well agreed among the editors that professional articles and editorials have a place in the school paper. . . . This is explained in part by the fact that the papers are published more frequently than are two of the professional journals so that there is greater flexibility for the exchange of ideas through the papers than through the professional magazines. The inclusion of professional content in the school journals of schools for the hearing is nearly always avoided, the theory back of this policy being that a publication should concentrate its efforts in one particular direction. Although force of circumstances may make it necessary for L.P.F. publications to do otherwise, it should be clearly understood that student interests come first and should be given first consideration in the content of the paper.[7]

Thus we find ourselves on the horns of a dilemma. It seems that no one type can serve adequately the varied purposes of a publication of a school for the deaf. The student publication, despite its merits, cannot fully represent the school to persons unacquainted with professional problems. Likewise, the publication edited by a staff member tends to minimize student participation and to subordinate news of student activities, which are of great interest to parents as well as students. The fault seems to lie more in the diversity of purposes than in administrative difficulties or innate lack of ability.

Since no single type of publication can meet the objectives set, decision as to what type will be employed is a matter of school policy and personal opinion as to the worth of certain objectives. A glance at the frequencies with which the aims were listed in editorial mastheads will show that four of the aims were accorded almost equal value. Accepting the indicated fact that schools desire their publications to accomplish all of these four aims, the best solution seems to lie in some combination of the two types.

This problem has been met in different ways by different schools. The most elaborate arrangement is that of the Minnesota School, where a staff-edited magazine and a student-edited newspaper are printed. Both are excellent examples of their respective types of publication; however, such an ideal solution might not be practicable in any but a large school. A unique and close to ideal set-up is maintained by the New York School; three publications are is-

[7] Gough, *op. cit.*, p. 15.

sued: *The New York Journal of the Deaf,* a national weekly newspaper which gives the students a maximum of practical printing work; *The Fanwood Journal,* a staff-edited magazine; and a mimeographed weekly newspaper published by the students for local circulation with a minimum of faculty supervision. Another attack open to all schools is to establish in the staff-edited publication departments edited by students and to limit staff participation to editorials and articles on professional subjects and general editorial supervision of the whole; this is done in several schools. The obverse of this practice would be to have a student-edited publication with a parents' page or a faculty department where items or longer articles of professional worth could be printed. Some schools turn over certain issues of their publications wholly to the students; the *California News* has had a student-edited magazine and a staff-edited magazine at alternate periods; the Louisiana *Pelican* turns over one publication a year wholly to the students, who must do all writing, editing and printing without assistance from the faculty. Several schools besides the New York School have student-edited mimeographed newspapers in addition to staff-edited publications.

In the opinion of the writer, the best solution is a staff-edited publication with student-edited departments for news of school activities and a mimeographed newspaper for local circulation by the students. Local circulation of a mimeographed newspaper obviates the need of great faculty supervision; motivation is sufficient; it is a flexible medium which can meet the needs of a wide grade range and the cost is not great. A mimeographed newspaper can be almost wholly the product of student talent and lack of formality makes it possible to include varied student endeavors.

However the problem may be met by individual schools, total sacrifice of the student-edited publication cannot be justified. The student-edited publication is an activity of great merit, a powerful motivating force for better English and an avenue of prideful creation not to be lightly discarded.

Miscellaneous

I. S. F.

The Oregon State Program for Conservation of Hearing.—The Division of Maternal and Child Health of the Oregon State Board of Health, Portland, Oregon, has issued a report, "The Oregon Program for Conservation of Hearing." This report describes with great minuteness how its statewide program is meeting the problem of hearing loss in its children. This program assumes a four-fold purpose, namely, 1. to discover those children who are genuinely and potentially subject to loss of hearing; 2. to obtain the necessary medical care; 3. to provide a satisfactory school readjustment, and 4. to promote a more wholesome practice in the community with regard to hearing health. These purposes may be more easily achieved when community co-operation is secured—the report explains clearly how such support may be aroused—and when the necessary specialized aid is provided to regain or preserve whatever latent hearing remains, to build the individual child's resistance to further hearing impairment, and to make possible for him a maximum socio-school growth.

In an Appendix the report carries an elaborate series of forms used to facilitate the various testing procedures, the records for the same, instructions to assistants in the tests of hearing, information for the benefit of school principals, teachers, physicians and parents.

In the State of Oregon, the Division of Maternal and Child Health, in conjunction with the schools, tested 65,750 children in 32 counties in the period 1937 to 1939.

One of the striking features of the program as here described is the efficient follow-up after the measure of hearing ability has been completed. It is in this important respect that so many similar efforts fail, that is, in inadequate remedial attention after the facts of impairment have been determined.

The New Rochelle, N.Y., Program.—How one community deals with the question of children acoustically handicapped

is told in the *Journal of Exceptional Children,* March 1941, by Louis M. Di Carlo, in an article, "New Rochelle's Program for Its Hearing Handicapped Children."

The basic motive of the effort, according to this writer, is the belief that it is in the interest of democracy to maintain the dignity and integrity of the individual and to salvage every particle of human power. There is then presented the formula which outlines the steps taken by the educational authorities of the city of New Rochelle, N.Y., to find the right place for children with defective hearing, namely,

1. A "diligent and thorough quest" to locate hearing-handicapped children.

2. Recommendation of remedial medical attention and specialized aid in this direction when the home is unable itself to provide this care.

3. A program of "compensatory education" in a normal school environment on the itinerant teacher plan. Preliminary to this special instruction is an effort to diagnose thoroughly each child's difficulties and to "desensitize" or re-orient him to his present environment, a process accomplished by conference with all who have contact with the child, *i.e.,* nurse-teacher, teachers, physician and parent, and by stimulating the child to active co-operation in the program designed for his special needs. The "compensatory" program proper then comprises specifically these points: Advantageous seating, determined by the home-room and special teachers; Lip-reading; Training of residual hearing; Guidance, applying the same principles and activities as in effect for all hearing children in the city of New Rochelle; Individual tutoring; and finally, special Speech Training.

Assistance to Teachers for Improvement in Service.—We quote this interesting item from the Eighty-Second Annual Report of the Halifax, N.S., School for the Deaf for the school year 1939-1940:

> Assistance and encouragement are being given to some teachers each year to improve their usefulness in the special work required of a teacher of the deaf. This assistance consists of payment of part of the direct expenses of a teacher's attendance at a Summer School, as

well as encouragement to visit other schools for the deaf and other vocational schools where best methods may be learned at first hand.

Suggestions for Public School Teachers in Dealing with Children Who Have a Hearing Loss.—A common error in dealing with those children in the public schools who have been found with some degree of hearing loss is to assume that giving them a more advantageous classroom seating will adequately solve the problem. Such a measure, on the contrary, is only an initial step among the many that should be taken.

What appears to be an effective program is contained in this list of suggestions appearing in the October 1940 issue of *Pennsylvania Public Education,* in an article describing the audiometric testing program as provided for by state legislation in Pennsylvania.

SUGGESTIONS TO TEACHERS

1. The hard-of-hearing child should be seated near the center of the room, in a front seat. The front position will enable the child to hear the teacher's voice more easily, and at the same time he will be in a position to read lips more efficiently than he can from a distance.
2. The child should be encouraged to watch the face of the teacher whenever she is talking to the class.
3. The teacher should try to face the hard-of-hearing child as much as possible when she is speaking to the class. She should try to give all important instructions from a position which is close to the child.
4. The teacher should avoid using loud tones or exaggerated lip movements in speaking to the hard-of-hearing child.
5. The hard-of-hearing child should be encouraged to turn around so as to see the faces of children who are participating in class activities.
6. If a choice of teachers is possible, the hard-of-hearing child should be placed with the teacher who speaks slowly and precisely.
7. We are apt to over-estimate the hearing efficiency of the hard-of-hearing child, because when he is paying close attention he apparently hears quite well. It is to be remembered that this child is hearing at the expense of a greater effort than the normal child expends. It is to be expected that it will be difficult to hold the attention of the hard-of-hearing child.
8. A hearing loss which lasts over a period of time tends to result in a dull, monotonous voice and inaccurate diction. Therefore, the hard-of-hearing child should be encouraged to speak clearly. Keeping the child "speech-conscious" will help him to resist the usual damage which a hearing loss brings about in a voice.
9. Interest in music should be encouraged, especially participation in vocal music.
10. Since a hearing loss is a defect which affects the language processes, the child should be encouraged to compensate by a more active interest in all language activities: Reading, spelling, original writing, etc.

11. The hard-of-hearing child should be drawn into active participation in all plays and other activities which involve speech.
12. The hard-of-hearing child should be carefully watched to be sure that he is not withdrawing from the group or that he is not suffering a personal reaction as the direct result of his impaired hearing.
13. The nurses and teachers should be especially vigilant in noting common colds, influenza, throat and nose infections, tonsillitis, bealing ears, etc., in the hard-of-hearing child. If at all possible, these conditions should be prevented. When they do occur, they should receive medical attention as quickly as possible.
14. All special considerations which are shown the hard-of-hearing child should be handled so as not to call attention to the defect.
15. The child's hearing should be tested on an individual audiometer at least each year.

Aviation and Hearing.—In view of the vastly expanding activity in aviation of the present day, it becomes a matter of importance to examine the possibilities of the effect of flying on the physiologic functions. A number of studies have suggested a connection between the work of the pilot and diminished hearing power.

One such study is reported on, under the title "Hearing Among Experienced Aviators," in the *Proceedings of the Staff Meetings of the Mayo Clinic,* April 2, 1941 (vol. 16, no. 14). This reviews the audiographic records of 88 out of 100 experienced pilots in the service of one of the major American commercial airlines. These men had an age range from 22 to 40 years, with flying experience ranging from eight months to seventeen years, each.

The first fact revealed was that among these men there was practically no disturbing ear condition, such as chronic discharge, otitis media, etc. But there was evidence of a lessened auditory sensitivity, as is shown in the following table:

TYPES OF HEARING LOSS ENCOUNTERED IN 88 EXPERIENCED PILOTS

Condition of Hearing	*Number*
"Borderline" normal	5
Normal	42
Nerve deafness	16
Unilateral conduction loss	3
Conduction type of loss	22
Total	88

Among the more significant conditions found in connection with the above table were these. Taking out "borderline" normal cases, at least half of the remaining subjects were classed as "normal," that is, their flying experience (average, four years) had had no effect upon their sense of hearing.

Sixteen, however, or approximately one fifth, were classified as having nerve deafness, in which hearing by both air conduction and bone conduction was decreased, with a marked loss for the higher frequencies in both ears. The response to frequencies indicated greatest loss at frequency 1024 in one case, at 2048 in seven cases, at 2896 in two cases, and at 4096 in six cases.

Closer analysis of the audiographs showed that the greatest number of pilots with a hearing deficiency were particularly affected in the 4096 cycle zone, a condition borne out by a number of studies by other investigators. The tones 128 to 2048, the so-called speech range, apparently were little involved, accounting for the fact that very few of the pilots (only two) admitted they were conscious of difficulty with their hearing.

A Popular Review of Present-Day Education of the Deaf.—The Atlantic Monthly for June, 1941 carries an article, by Barbara Rex, "Children—But Deaf," which attempts a running portrait of the facilities now available for the discovery and teaching of deaf children. The theme springs from the story of a mother who, only when her son has reached the age of seventeen, realizes with certainty that he is deaf. The realization brings to her a strange perplexity over what is to become of him. She visions it all as a calamity, and the bewilderment threatens to break her personal morale, despite the fact she is a woman of college training. In the hope of bringing succor, her friend—the author of the article—sets out on a pilgrimage of discovery and so reveals the marvels of education of the deaf.

With this as an introduction, the reader is told of the workings of the Otological Research Laboratory of the Johns Hopkins University Hospital, where by radium and

X-ray treatment, it is shown, a large proportion of the great number of cases of deafness which find their beginning in early childhood may be averted if taken in time. The great flaw, it is pointed out, is that only a comparatively small number of the children who can be benefited in this way are reached. This description of the progress in the clinics and laboratories in prevention of deafness is followed by a discussion of the rapidly growing movement toward conservation of hearing, particularly how the testing of school children has by law become state-wide routine in an increasing number of states.

Then comes consideration of the school provision for children with varying degrees of hearing loss. Two prominent centers are selected for special description, the Pennsylvania School at Mt. Airy and the Lexington School in New York City. The fine courses of study in these schools, the wholly normal attitudes of the children, and the skill of their teachers are enthusiastically described. The author of the article notes with especial eagerness the remarkable advances made in the use of hearing aids as part of the school work. The work of the day-schools is also mentioned with great favor.

The attitude of the author, however, turns frigid when the "private deaf school" is considered. The latter, she concludes from a visit to one of them, must be quite worthless for the average deaf child. Here she finds "a deadening atmosphere of exclusiveness." So that the readers of the ANNALS may grasp the intensity of the observer's views on this matter, the picturesque account of her visit is here reproduced.

> After many letters had passed, and my credentials as a worthy, socially eligible woman had been minutely examined, I was admitted to one of the most exclusive schools for the deaf, in a most expensive neighborhood, where twenty-five privileged children are taught to "take their rightful place in life." They are housed, with hardwood floors and spiral staircases, and fed from stainless-steel kitchens, all for the sum of $1,650 a year—without extras. Taken with extras, the amount is closer to $2,200. The place, I was told, was "just like home." It certainly did not seem like a school. Upstairs the bedrooms were elaborate. Never was such neatness expected of children. It was not permissible for a bath mat to be askew.
>
> The students are being drilled and trained relentlessly, for they must be equipped with a high-school education. All their time is devoted to study. They will, perhaps, be brokers or publishers or

designers or artists. The girls are to "have an interest." Most important of all, they are to marry hearing people. Painful stress is laid on teaching them to be ladies and gentlemen. They are taught to have their own characteristics, never the characteristics of the deaf.

The wealthy are paying fat sums for this process of education, and are evidently satisfied with the results.

It was difficult to obtain accurate information about numbers of students entering colleges from this school. No one seemed able to remember, or willing to find out. "The greater proportion of students. . . ." What did that mean? A report from the *Volta Review* shows that this school has sent twelve students to college.

The writer of the article maintains "the problem of the pupil who comes from a higher income group needs discussing, airing." It is difficult to understand the need for this concern, since the number of deaf children enrolled in purely private schools is but a small proportion of the total number enrolled in schools in the United States. The author of the article might have noted also in the very issue of the *Volta Review* from which she quotes that a considerable portion of its advertising space lauds the virtues of the private school for deaf children.

There are other points about the discussion that are not very impressive. After so much information about schools for the deaf has been obtained, it is unfortunate to have the writer repeatedly label them "deaf schools."

A few schools for the deaf are singled out for special praise of what they are doing, and it is readily agreed such praise is justified. But there is nary a word of mention of other equally efficient and equally important centers, such as the New Jersey School at Trenton, the Rochester School in New York, the New York School at White Plains, the Illinois School in Jacksonville, the California School in Berkeley—to mention only a few—each contributing much of significance to the education of the deaf. Gallaudet College, now completing its seventy-seventh year, is conceded this brief item: "There is also a college for the deaf—Gallaudet College in Washington, with 160 students." The training in leadership which Gallaudet College has in its long history afforded so many young deaf men and women is ignored; instead we are told

In 1938 the Johns Hopkins University awarded a degree of Doctor of Philosophy to a graduate of the Clarke School for the Deaf who

had been totally deaf since childhood. A totally deaf boy got his Ph.D. from Harvard after two hours of oral examination.

In 1877, after receiving special instruction, one totally deaf student in the United States passed the necessary examinations and was admitted to a high school with hearing pupils. In 1899, two were admitted to regular high school and two actually went to college. In 1917, four deaf students went to college and six to high school. In 1939, six went to college and 32 to high school. These were the totally deaf who depended entirely on lip reading. In all, since 1877, 167 deaf students have gone to colleges and universities and 499 to high schools.

The article is also all too meager on the life of the deaf after they leave school.

In her closing remarks, the author expresses the wholesome faith, referring to the girl graduates of the Lexington School, that "they are not good deaf people, but good citizens who are deaf."

On the whole, a discussion of this kind in so widely read a medium as the *The Atlantic Monthly* will serve to swell the awakening interest in the problems of defective hearing, a matter of prime national importance.

Compendium of State Legislation on the Hard of Hearing and the Deaf.—Under direction of the State Law Index Section of the Legislative Reference Service of the Library of Congress, an extremely valuable piece of work has been completed with the publication of "A Digest of State Laws Affecting the Hard of Hearing and the Deaf," with supplementary notes on administrative acts, orders, and policies. (77th Congress, 1st Session, House Document No. 151.)

This document, prepared by Jennie Welland, of the State Law Index Section of the Legislative Reference Service of the Library of Congress, classifies by states the legal enactments and supplementary provisions referring to both the hard of hearing and the deaf. This study was made in response to the rapidly growing volume of interest in conservation of hearing and the problems arising from loss of hearing. This greatly expanding interest has begun to manifest itself in tangible efforts through legislation, and it was with the hope of lending some direction to these efforts that the present compilation was made.

The classifications make a special distinction in the case

of laws involving simply such terms as "too deaf," "deaf to such an extent," etc., as against those which refer to deaf persons directly. Another distinction in the classifications deals with the laws relating to hearing tests for school children. Certain laws referring to the physically handicapped in general, especially where there is an implication for the deaf or hard of hearing, are also noted. No reference, however, is made to workmen's compensation provisions or other labor legislation with respect to special licenses to the physically defective.

An extract from the digest—the summary for the State of Alabama—will indicate the plan and method of summary employed:

Discovery, prevention, etc., of hearing defects in children.

School Code of 1927, § 619-620. Requires the state department of education and the state board of health, in conjunction, to arrange for the examination of every child attending the public schools of the state for physical defects of any kind embracing diseases of the ear, nose and throat. Requires county boards of education and county boards of health to co-operate with the state boards. County superintendents of education must arrange with county health officers a schedule of dates for such examination, which must be given free of charge before October 1 of each year, by the county health officer.

Education.

Compulsory education; state school for the deaf.

Laws 1931 No. 61. Requires that every child so handicapped by deafness or inability to speak as to be unable to make satisfactory progress in the public schools of the community in which he resides must be enrolled in the Alabama Institute for the Deaf and Blind not later than five days after the opening of the school and must be kept in school during each scholastic year for a term of six weeks or for the full school term. Exemption is granted to a child whose mental or physical condition is such as to render his attendance at the school inadvisable or to a child who is attending a public or private school in which instruction is equivalent to that offered at the state institute. A parent or guardian who fails to comply with the requirements of the statute is subject to a fine of not more than $100 and may also be sentenced to hard labor for the county for not more than 90 days.

Laws 1931 No. 281. Applicants for admission to the Alabama Institute for the Deaf and Blind must be of sound mind, free from disease, and of good character, and must be citizens of the state. The length of time which any pupil may remain in school must not exceed twelve years, except that the trustees, upon recommendation of the superintendent, may increase the term from year to year to not exceeding four additional years. No pupil may be retained in the school after having passed the age of 25. No pupil may be retained in the school after it has been ascertained that he has ceased to make progress or is not being benefited.

School Code of 1927, § 585. Provides for an appropriation of $320 per year per pupil at the Alabama Institute for the Deaf and Blind.

Vocational rehabilitation.

School Code of 1927, § 413-420. Accepts provisions of the Federal Vocational Rehabilitation Act, adopting, in the main, the provisions of the suggested state Vocational Rehabilitation Act.[1] Designates the state board of education, instead of a special board for vocational education, as the administrative agency.

Authorizes the board of education of any county, city, or incorporated town, or any state institution of higher learning having its own board of control to co-operate with the state board of education in the training of disabled persons and to use any tax moneys in the same manner as moneys for other school purposes are used for the maintenance and support of public schools.

Welfare work for the physically handicapped in general.

1936 Cumulative Supplement to Code of 1928, § 2931 (22). Places upon the county director of public welfare responsibility for the care of handicapped children.

Motor vehicle operators.

1936 Cumulative Supplement to Code of 1928, § 1397. Prohibits issuance of a motor-vehicle driver's license to any person afflicted with a physical disability which, in the opinion of the probate judge, will prevent him from exercising reasonable and ordinary care over a motor vehicle.

Tax exemptions.

1936 Cumulative Supplement to Code of 1928, § 3022. Exempts deaf-mutes from property tax up to $2,000.

Legal provisions noted under other state classifications refer to such items as "guardian for deaf and dumb minors"; the training of teachers for the deaf and the hard of hearing; jury duty (in most cases indicating challenge is valid if physical disability, that is, inability to hear, prevents comprehension of the evidence); state aid for individual deaf students seeking higher education; soliciting charity under pretense of deafness; a state census; requirement of ability to hear on the part of certain railroad employees; incapacity of deaf persons to witness wills, or to act as arbitrators (in only one state, Louisiana—a curious survival, perhaps, of the ancient Justinian Code, a provision of which denied the deaf the right to make wills, manumit, contract, or act as witnesses); provision for a field agent or state bureau, and the activities usual with such an officer or office; state aid for day-schools; special provision for deaf-blind

[1] The provisions are given in Appendixes I and II of the "Digest."

children; opportunity for physically handicapped persons in civil service; care of indigent deaf-mutes; lip-reading instruction for adults; and interpreters for the deaf in the courts, etc. Three states, Alabama, Florida and Texas, provide legally for some form of tax exemption for deaf persons.

The customary outline of legislative provision with respect to the deaf and the hard of hearing among the forty-eight states is, however, contained within the fields of discovery, prevention, etc., of hearing defects in children; education; vocational rehabilitation; motor vehicle operation; and limitation of jury duty.

In its present form, the booklet of 112 pages is listed as published by the Government Printing Office, Washington, 1941.

Certification.—The following new list of names brings to 1,160 the total number of instructors of the deaf who have submitted application for certification with the Conference of Executives of American Schools for the Deaf:

Jamie Barbara Daugherty, Washington School
Esme Elizabeth Eldred, Mackay School
Nina Norine Franklin, Texas School
Rudolph D. Gamblin, Texas School
Cyrus L. Gover, Jr., American School
Ingibjorg Hallson, Mackay School
Mamie A. Heflybower, Texas School
Venetia Clarke Parson, New Jersey School
Marie Theresa Pelser, Pennsylvania State Oral School
Ollie Peterson Schoolfield, Texas School
Alberta Starcevich, New Mexico School
Archibald W. Walker, American School

A Suggested Program for the District of Columbia.—In a report to the Board of Education of the District of Columbia, July 1, 1940, an Advisory Committee on Handicapped Children included among its suggestions after almost two years of study a broad program in dealing with the complex problem of auditory handicap among the school children of the District. Recognizing the presence of many kinds of hearing loss as well as its hitherto unsuspected prevalence, the Committee agreed there was need for a marked exten-

sion of existing facilities. For this purpose a two-fold program was recommended, a general or long-range program and an immediate program. The conclusions are given here because they may be of value for areas elsewhere in the nation where there is a similar need for such action.

GENERAL OR LONG-RANGE PROGRAM

1. That a Conservation of Hearing Program for white and colored children in the District of Columbia be adopted and put into effect as soon as possible and that such a program cover:
   A. Periodic screening tests of the hearing of all school children with the use of audiometers or such other scientific devices as may meet the approval of the Health Department of the District of Columbia, followed by references of such children found to have hearing defects for further special otolaryngological examinations and treatment if indicated.
   B. The establishment under the Health Department of a Hearing Conservation Clinic for otological examination and testing of the hearing of children of preschool and school age. This clinic, appropriately located and equipped, should be in charge of an otologist assisted by a nurse and clerk.
   C. (1) For severely hard-of-hearing children, the establishment of conservation of hearing classes in the regular public schools.
      (2) For all hard-of-hearing children in need of such helps, special vocational counseling and special training in speech and voice.
      (3) For all moderately hard-of-hearing children, lip-reading instruction in the regular schools, individual hearing aids, and advantageous seating.
      (4) For all slightly hard-of-hearing children in need of it, lip-reading instruction in the regular schools, and advantageous seating in the classroom.
2. That the education of the deaf children be continued at the Kendall School and at the Maryland School for the Blind at Overlea.
3. That the special education of the partially deaf be continued at the Kendall School, and at the Maryland School for the Blind at Overlea, and in the District of Columbia public schools, provided that in individual cases partially deaf children may be transferred to the conservation of hearing classes in the regular schools when in the judgment of the Board of Education and the Health Department such seems advisable.
4. That there be closer correlation between the courses of study offered at the Kendall School and the Maryland School for the Blind with courses offered in the public schools of the District of Columbia in order to facilitate transfers between these institutions and the public schools.
5. That selected cases of partially deaf children at the Kendall School be registered as day pupils at that institution when in the judgment of the Board of Education such seems advisable.
6. That consideration be given to the matter of providing appropriate instruction for home-bound children with hearing handicaps.

7. That a committee be appointed to study the desirability of legislation relative to the finding and reporting of children with hearing defects.
8. That endorsements of the Conservation of Hearing Program be sought from the Medical Society of the District of Columbia, parent-teacher groups, educational and civic associations and service clubs, and that their co-operation be sought in conducting a public education campaign in regard to the hearing health of school children.
9. That investigation be made into the probable cost of equipment for:
   A. Hearing conservation clinic.
   B. Group wiring equipment for conservation of hearing classes.
   C. Miscellaneous equipment for visual instruction.
   D. Individual hearing aids.
10. That appropriations be made for the equipment listed above and for the following personnel:
   A. Otologist in charge of the hearing conservation clinic.
   B. Nurse in the clinic.
   C. Clerk in the clinic.
   D. Technician in charge of audiometer hearing tests.
   E. Teachers in charge of two conservation of hearing classes. (Number to be increased as the need increases.)
   F. Two teachers in charge of lip-reading instruction for slightly hard-of-hearing and moderately hard-of-hearing children. (Number to be increased as the need increases.)
   G. Two speech correction teachers. (Number to be increased as the need increases.)
   H. Two social workers to visit the homes of the children.

IMMEDIATE PROGRAM

1. That annual city-wide surveys be made in all schools for the purpose of discovering children having hearing defects. Such surveys should be conducted under the direction of the Health Department with the co-operation of teachers and school physicians.
2. That lip-reading instruction be provided for the children with slight and moderate losses in hearing by at least two teachers of lip-reading.
3. That conservation of hearing classes under at least two teachers be established for the severely hard-of-hearing children.
4. That the final selection of children who are to receive lip-reading instruction be made on the basis of recommendations of the Health Department and competent specialists.
5. That the final selection of children who are to receive special education in the classes for the partially deaf or in the conservation of hearing classes be made on the basis of recommendations of the Health Department and competent specialists.

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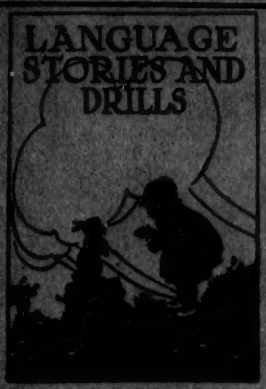

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